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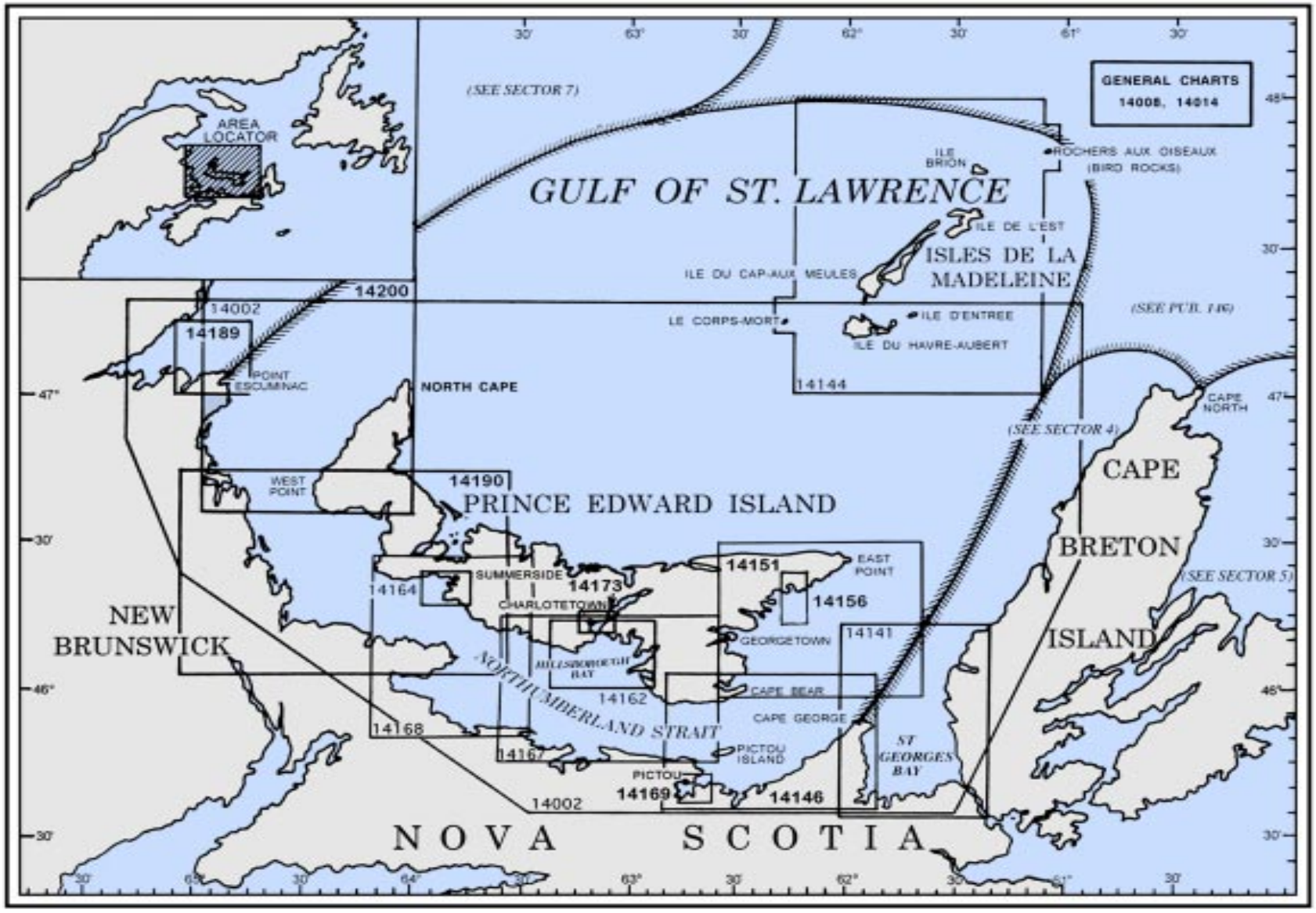

Additional chart coverage may be found in CATP2, Catalog of Nautical Charts

SECTOR **6** — CHART INFORMATION

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SECTOR 6

ISLES DE LA MADELEINE, PRINCE EDWARD ISLAND, AND NORTHUMBERLAND STRAIT

Plan.—This sector describes Iles de la Madeleine, including their off-lying islets and dangers, then the N and E coasts of Prince Edward Island and finally Northumberland Strait.

The general description of Iles de la Madeleine is from N to S, with both Prince Edward Island and Northumberland Strait being described from E to W.

Iles de la Madeleine

6.1 Iles de la Madeleine (Magdalen Islands) lie nearly 50 miles NW of Cape St. Lawrence and consist of a number of hilly islands joined together by a double line of sand bars and beaches which enclose extensive lagoons having shallow and narrow entrances. The one exception is Ile d'Entree, which is the highest of the group and completely detached to the E.

The sand bars which join the main part of the group together are only about 1 meter above the sea in places, but rise in other parts to hills of blown sand of considerable elevation. They appear to be building up, as there are ridges of sand accumulating and running parallel to the shore and about 0.1 to 0.2 mile offshore. There is generally from 2.7 to 3.7m of water over them, with depths of from 5.5 to 7.3m between the ridges and the shore.

The central part of these islands rise into hills which are rounded and frequently dome-shaped, and attain elevations of 61 to 170m. They are partially covered with small trees and have red cliffs which contrast with the sand, trees, and sky on bright sunny days. In stormy weather, the appearance is equally distinctive, for then the isolated hills and craggy cliffs are dimly seen through the rain and mist and appear to be joined together by long ranges of breakers, which hide the sand bars.

The climate is not as severe as the mainland in winter but summers are damp and cool with frequent fog and rain. During autumn, thick weather and E gales are prevalent.

In the navigation season there is service with the islands twice a week from Pictou, N.S. and Charlottetown, P.E.I. There is also a weekly service with Montreal.

There are no harbors for large vessels, but Havre-Aubert, Cap-aux-Muelles, and Grande-Entree are suitable for small ocean vessels and coasters. The principal industry of the islands is fishing and numerous facilities for this trade are available.

Tides—Currents.—The tidal currents around Iles de la Madeleine are variable in both direction and rate, as they are greatly affected by winds and currents in the Gulf of St. Lawrence.

A few miles N of Rochers aux Oiseaux (Bird Rocks) there is usually a current flowing SE, but the tidal currents set NE and SW between Ile Brion and the main islands to the S. South of the main islands, the flood flows NW and is divided by Pointe de l'Est, which turns the current to the SW toward Ile d'Entree.

On the SE side of the islands the ebb current sets strongly out of the lagoons and turns to the NE, generally following the S shore of the islands. Off Pointe de l'Est it meets the currents rounding the N side of Ile de l'Est and setting to the ESE. Here these two currents, together with the shoal water, cause a heavy breaking sea in strong E winds.

The tidal rise at springs is about 0.9m and 0.6m at neaps. Tidal currents generally do not exceed 1 knot, except close to shore and in the entrances to the lagoons. The ebb current is generally stronger than the flood, and its rate is increased by W winds. The rate of the flood current is increased by E winds.

Regulations.—Strict regulations of the Canadian Department of Fisheries and Oceans control the discharge of ballast water into Lagune de la Grande (Grand Entry Harbor) or within 10 miles of Iles de la Madeleine. No such deballasting is permitted by these regulations without the appropriate certificate issued by Area Manager, Department of Fisheries and Oceans, Cap aux Meules.

Outer Islands

6.2 Rochers aux Oiseaux (Bird Rocks) (47˚50'N., 61˚09'W.), about 16 miles NE of the main islands of the Madeleine group, are two rocks of red sandstone which appear to be diminishing in size from the action of the sea. The cliffs are perpendicular practically all around and sea birds exist on them in great numbers.

Rocher aux Oiseaux (Great Bird), the SE and largest rock, is 32m high and flat on top. Rocher aux Margaux (North Bird) is smaller and lower, and divided into three precipitous mounds which are joined just above the sea. A reef extends about 0.8 mile NE of North Bird and breakers are usually seen in the vicinity of the rocks.

A light is shown from a skeleton tower on the summit of Rocher aux Oiseaux. Two dwellings stand near the light.

Caution.—Magnetic anomaly has been observed in the vicinity of Rochers aux Oiseax. Mariners should use caution when using the magnetic compass in this area.

Depths in this area may be shallower by as much as 1.8m.

Ile Brion (47˚48'N., 61˚28'W.), 9 miles N of the main Madeleine group and about 11 miles WSW of Rochers aux Oiseaux, is formed of alternating and nearly horizontal strata of red and gray sandstone. The rocks are soft and broken, with perpendicular and overhanging cliffs along much of the shoreline. The cliffs on the N side of the island are much higher than those the S and there are several small coves. The highest point of the island attains an elevation of 75m near its center. Several areas are covered with stunted trees and there is a large grassy upland tract.

Ile Brion Light, 11m high, is shown from a white tower on Cap Noddy, the W end of the island.

Ile Brion is surrounded by a reef, some of which extends a considerable distance to the W and S. The reef extending S from the SW end of the island is broken with patches of less than 5.5m lying up to 1 mile offshore.

A rocky ridge, with depths of less than 12m, lying roughly parallel with the N coast, at a distance of about 2.5 miles from it, may be a danger to some vessels. Shallower depths continue to be reported in this area.

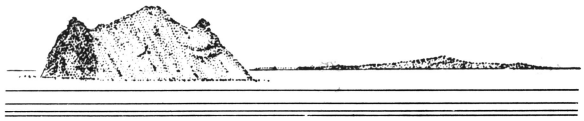
Anchorage.—In offshore winds anchorage can be taken in depths of 11m, sand, about 1 mile off the SE shore of Ile Brion and E of the reef extend S from the SW end of the island.

Caution.—A ridge of rocky ground exists between Ile Brion and Rochers aux Oiseax. Although the least charted depth is about 10.3m, shallower depths may exist and the swell builds on this ridge. Groundings have occurred. Ships are advised not to cross this ridge.

Le Corps Mort (Deadman Island) (47˚16'N., 62˚12'W.), located 7.5 miles W of Ile du Havre Aubert, the S island of the main Madeleine group, has steep sloping sides and when seen from the E or W resembles a pyramid. From the N or S, at a distance, it resembles a recumbent human form, from which it gains its name. It is rocky and the W side is moderately steep-to, but a reef extends 1 mile SE from the E end. Soundings give little warning when approaching the island.

Main Islands of the Madeleine Group

6.3 Ile de l'Est (47˚37'N., 61˚25'W.), the NE island of the group, has an isolated hill, known as Cap Nord Est (Northeast Cape), which rises in sheer cliffs to a height of 62m near its NW end. When seen from a distance the cape appears as the NE extremity of Ile de la Madeleine, as all the land E of it is considerably lower.



Le Corps Mort bearing 056˚, distant 1 mile

Ile de l'Est from E

Pointe de l'Est, the E extremity of the island, is low and sandy, and encloses several shallow ponds. There are some sand hills on the point and others of higher elevation extend inland.

A sand ridge, with a least depth of 4.3m, lies about 1.3 miles SE of Pointe de l'Est. There is a channel between the ridge and the point, but local knowledge is advisable.

A light, exhibited from a square skeleton tower, and a racon are situated on Pointe de l'Est.

Doyle Reef, about 6 miles ESE of Pointe de l'Est, has a least depth of 7m over sharp rocks. The water surrounding this shoal is deep and this danger seldom breaks except in very heavy gales.

Ile de la Grande Entree (Coffin Island) (47˚33'N., 61˚31'W.), formed of several low hills, lies SE of Ile de l'Est and is connected to it by Pointe Old Harry, a narrow point of red sandstone of moderate height. A small breakwater with about 2.4m of water alongside is situated on the N side of the head.

Bassin aux Huitres, available only to boats at HW, is a narrow lagoon enclosed by a sandy strip on the S side of Ile de la Grande-Entree.

Caution.—Les Colombines lie SE of Ile de la Grande-Entree and consist of a number of small shoals and rocky patches, some with depths of only 0.9m. Shoal water extends about 2 miles NE of Les Colombines, with depths of 4.9 to 10.1m.

Clark Shoal, with a depth of 5.2m, lies 8.5 miles SE of Pointe Old Harry and is generally steep-to. Goodwin Shoal, with a least depth of 5.9m, lies about 6.5 miles SSE of Pointe Old Harry. A depth of 9.4m, rock, lies about 1 mile to the E. Quero Ground, with its dangerous wreck close SE, lies about 1.5 miles SE of Goodwin Shoal.

6.4 Havre de la Grande Entree (47˚35'N., 61˚35'W.) is the largest of the interior lagoons, with depths of from 1.8 to 5.5m. The lagoon extends S to Ile du Cap-aux-Meules and can be traversed over its length at HW by boats.

Winds—Weather.—Strong winds and fog are frequent, particularly in October and November, the prevailing winds being from W and NW.

Ice.—Ice forms in late December or early January and remains, unless broken up by the passage of ships, until April.

Depths—Limitations.—The village of Grand-Entree is situated on the E side of the entrance, just within the lagoon, and has a government wharf, 122m long, with a depth 2.2m alongside. The narrow channel to the wharf is marked by buoys.

In the harbor near the W entrance point to Baie de la Grosse Ile is a wharf for loading salt. The finger-like wharf is 300m long with an alongside depth of 7.3m. The channel across the lagoon has been dredged (1993) to a depth of 7.3m. Because of silting, the depths and the width of the channel leading to the wharf vary considerably. The channel inside the lagoon is privately buoyed.

The entrance to Havre de la Grande-Entree is through a narrow channel running NE between sandy, shifting shoals and then between Ile de la Grande-Entree and Dune du Sud, about 0.1 mile WNW. It should only be attempted with the flood current, and in good weather and visibility. The approach channel was reported to have dredged depths of 7.3m.

Aspect.—Two conspicuous square towers (47˚37'N., 61˚33'W.), each about 30m high with red lights, are situated about 1.4 miles WSW of Cap du Dauphin. These towers are visible from the S when approaching the entrance to Havre de la Grande Entree.

Range lights are shown at Grande Entree from square towers. The lights are in line, bearing 026˚.

Grande Entree sector light is 9.2m high. The white sector, on a bearing of 018˚, leads in the entrance of Chenal de la Grande Entree.

La Grosse Ile sector light, 5.8m high, is situated 0.5 mile W of Pointe de la Grosse Ile. The white sector, on a bearing of 034˚, leads through Chenal de la Grande Entree.

Dune de l'Ouest range lights, in line bearing 287˚, are shown from poles. The front is 10m high and the rear 5.5m high.

The SE limit of a spoil ground lies 0.2 mile NW of the transit of Grande Entree leading lights, to seaward and 0.3 mile SW of YC lighted buoy, and runs parallel to the transit for a distance of 0.7 mile.

Anchorage.—Uncharted submarine power cables are reported to be laid between the inner end of the 300m wharf and Ilot B, situated SSE of the wharf. Vessels should not anchor without local knowledge.

Caution.—The range lights and buoys may be moved at any time to best suit the channel through the shifting bars.

6.5 Ile du Havre aux Maisons (Alright Island) (47˚25'N., 61˚47'W.) is situated about 11 miles SW of Ile de la Grand-Entree and noted for its steep cliffs on its E side which attain a height of 110m. They are grayish-white with shades of brick-red at the base.

Cap Alright, at the SE end of the island, is low, but W of the cape the cliffs rise again. A conspicuous hill, Butte Ronde, about 102m high, is located just N of the cape. A light is shown from a white square tower on Cap Alright.

Dune du Sud extends NE from Ile du Havre aux Maisons to Havre de la Grande-Entree. Ile Shag, a low, sandstone island, lies close off Dune du Sud, about 6 miles NE of Cap Alright. A windmill is situated on Dune de Sud, about 2 miles SSW of Ile Shag.

Off-lying Dangers.—Alright Reef, with a least depth of 2.1m, rock, extends up to 4 miles E of the E side of Ile du Havre-aux-Maisons.

A rock, with a depth of 4.3m, lies just a little over 1 mile ESE of Cap Alright.

A wreck, with a least depth of 9.1m, lies about 9.5 miles NE of Cap Alright.

Pearl Reef (47˚20'N., 61˚36'W.), about 8 miles ESE of Cap Alright, consists of several rocks with a least depth of 2.7m. It breaks heavily, even in a moderate sea and is dangerous to approach in any weather. A shoal, with a depth of 9.7m, lies about 1.5 miles S of the reef.

Harve aux Maisons, at the W end of Ile du Havre-aux-Maisons, is entered through a narrow shifting channel with depths of 0.6 to 2.1m. The channel is buoyed, but these aids do not necessary mark the deepest water and local knowledge is necessary.

A road bridge, with a vertical clearance of 3m, crosses the head of the harbor, spanning a channel that leads into Lagune du Havre aux Maisons (The Great Laggon). An overhead cable, with a vertical clearance of 12m, stands close SE of the road bridge.

The channel beneath the bridge is marked by two lights which are exhibited from the NE and SW ends of the bridge.

The lagoon is connected with Havre de la Grande Entree at HW by a narrow boat channel.

In the lagoon, close E of the bridge, there are several small wharves and a fish plant.

Ile du Cap aux Meules (Grindstone Island) (47˚23'N., 61˚55'W.) lies close SW of Ile du Havre aux Maisons and contains the best facilities in the Magdalen group. The island is bordered by cliffs in many places and rises more or less uniformly to an elevation of 162m in a conspicuous peak near the center of the island.

Cap aux Meules is a conspicuous point of land extending from about the middle of the E side of Ile du Cap-aux-Meules. It is composed of gray sandstone and rises to a height of 45m near its seaward end. An oil tank farm is situated close W of the cape.

Grindstone Wharf extends 0.1 mile E from Cap-aux-Meules and has a spur on its outer end extending about 155m farther to the SE. The land N of Cap-aux-Meules has been filled for a distance of 0.2 mile and then extends into a curved breakwater, about 0.4 mile long, which forms a basin and protects the wharf from E winds.

On the NE side of the outer leg of the wharf is a 122m long tanker berth, with a reported dredged depth alongside of 6.2m. The N side of the inner leg of the wharf has a depth of 5.1m alongside its outer end, shoaling to 3.7m about 60m further W.

The wharf is approached by a channel dredged to a depth of 6.8m over a width of 60m.

Local fast ice appears in mid-December with significant pack ice in the approaches a month later. The area is usually clear by mid-May.

Alongside the tanker berth there are depths of 6.7 to 7.6m for a distance of 135m from the berth. Within the harbor, W of the curved breakwater, there are general depths of from 4.6 to 6.7m.

Two breakwaters extending from the SW side of Grindstone Wharf enclose a marina basin. A public wharf, 150m long, with a depth of 2.3m alongside, forms the N side of basin with the marina on the SE side. A light is exhibited from the S breakwater.

On the N side of the harbor there is a 7m wide haul-out facility with a 100 ton travel lift.

Two lights, in line bearing about 330˚ and visible only when in alignment, are shown from the spur of Grindstone Wharf and lead through the entrance channel. Both the front and rear lights are shown from a red square skeleton tower.

A light is shown from a square skeleton tower on the head of the breakwater.

Le Gros Cap (47˚21'N., 61˚53'W.), the SE extremity of Ile du Cap-aux-Meules, is a cliffy projection about 18m high. A small government wharf, with a depth of 1.5m alongside, lies close N of the cape. A tower marked by red obstruction lights is situated about 2 miles WNW of Le Gros Cap.

Note.—The W side of Ile du Cap-aux-Meules is described after Ile du Havre Aubert, beginning in paragraph 6.9.

6.6 Ile du Havre Aubert (Amherst Island) (47˚14'N., 61˚56'W.), the SW island of the group, is connected to Ile du Cap aux Meules by two ridges of sand which enclose Havre aux Basques, an extensive lagoon available only to boats.

The hills on Ile du Havre Aubert rise to an elevation of 145m in its S central part. A microwave tower, marked by red obstruction lights, stands at an elevation of 227m on the hills near the center of the island.

Colline de la Demoiselle, toward the E end of the island, is a large conical hill which forms a good mark when approaching Havre Aubert from the NE. The seaward side of this hill consists of dark, red cliffs, and the summit attains an elevation of about 81m. An illuminated cross situated on another conical hill about 0.2 mile E of Colline de la Demoiselle.

Baie de Plaisance (Pleasant Bay), between Ile du Cap aux Meules and Ile du Havre Aubert, is the best roadstead in the Madeleine group and the only place where vessels can lie protected during the summer months when E gales are infrequent. In other seasons, when E gales are common, a vessel may be in considerable danger; the greatest caution is advised at all times.

Note.—Vessels bound for Baie de Plaisance should pass at least 2 miles W of Pearl Reef.

6.7 Havre Aubert (Amherst Harbor) (47˚14'N., 61˚50'W.) (World Port Index No. 5690) is situated on the N side of the E end of Ile du Havre Aubert within a long sandy spit known as Sandy Hook. A narrow peninsula of low land, the E end of which is Cap Gridley, presents gray cliffs to seaward and forms the W side of the entrance to the harbor. Shea Point, the N end of the peninsula, is located a little over 1 mile WNW of Cap Gridley.

The entrance channel, which is buoyed, lies between Cap Gridley and the sandflats, and carries a least depth of 4.9m to the government wharf at LWS. At the inner end of the channel, and S of the government wharf, is a sheltered space with depths of 3 to 4m, mud.

Ice.—The harbor is usually frozen over about December 15, and clears of ice about April 10. The first vessel usually arrives about May 1, and the last one leaves about November 15. Field ice is usually present to about May 12.

Depths—Limitations.—The main government wharf, S of Cap Gridley, is 183m long with a least reported depth of 5.2m alongside. There is a fish plant, with a chimney, between the wharf and the point.

A government wharf, 122m long with a depth of 4m alongside, is situated at the SW end of the harbor, SE of Gorton-Pew fish plant.

A wharf in ruins is situated outside the harbor W of Pointe Shea.

A small craft pier with 1.1m alongside is situated in Petite-Baie in the NW part of the harbor.

Aspect.—Range lights, in line bearing about 213.5˚, are situated in the S part of the harbor and lead to the entrance channel. Both lights are shown from red square skeleton towers.

A sector light is exhibited from the head of the small craft pier, which accommodates a marina, situated 0.3 mile W of Cap Gridley, the white sector bearing 322.75˚ to 325.75˚ leads to the marina and into La Petite Baie. The channel to the pier is privately buoyed.

Anchorage.—The best anchorage outside the harbor is in a depth of 7.3m, sandy clay, with Cap Gridley bearing SSW at about 0.8 mile. Larger vessels can anchor farther out in depths of 9.1 to 11m.

Ile d'Entree (47˚17'N., 61˚47'W.), located off the E end of Ile du Havre Aubert, is the highest and only detached island of the Madeleine group. It attains an elevation up to 170m and has red cliffs up to 122m high at the NE and SE ends. The conspicuous Tower Rock, of red sandstone, is joined to the N side of the island.

Fishermans Wharf, situated on the W side of the island near the village, is L-shaped, with an inner face 90m long, a reported (1997) depth of 1.7m, and a light at its head.

The outer face is protected by rocks. A breakwater lies close N of the wharf and the outer part of the enclosed basin was dredged to 1.7m.

Caution.—Silting may cause the depths to be less than charted.

La Passe (47˚17'N., 61˚42'W.), between Ile du Havre Aubert and Ile d'Entree, is restricted to a navigable width of about 0.5 mile by a sandy shoal extending for 2 miles E from Sandy Hook, and the rocky shoals lying off the W coast of Ile d'Entree. The channel is buoyed from S to N and carries a least charted depth of 5.9m, but local knowledge is recommended.

Caution.—A rock, with a depth of 4.9m, lies on the W side of the S approach to La Passe, about 1 miles SW of Ile d'Entree Light.

Rocks, with depths of 3 to 3.4m, lie about 0.5 mile W and 0.4 mile SW, respectively, of Ile d'Entree Light.

A rock, with a depth of 2.4m, lies about 0.3 mile NW of Northwest Spit, the NW extremity of Ile d'Entree.

6.8 South and West Coasts of Ile du Havre Aubert.—The S coast of Ile du Havre Aubert, between Sandy Hook and Le Bassin, about 5 miles WSW, consists of sandhills and beaches with shoal water from 0.5 to 1 mile offshore. There is good anchorage, about 1 mile off the entrance to Le Bassin, in 11 to 16.5m, sand, with winds from the NW through NE.

About 1.5 miles W of Le Bassin, the coast becomes high and cliffy. **Cap du Sud** (47˚13'N., 61˚58'W.) is the S extremity of Ile du Havre Aubert and the entire Madeleine group. Anse a la Cabane is a small bight formed between Cap du Sud and Le Gross Cap, about 1.5 miles WNW, and affords safe anchorage in NE winds about 0.8 mile offshore. The best berth is in 14.6 to 16.5m, sand, off the middle of the bay, about 0.8 mile offshore. There are several small breakwaters along this section of the coast for the protection of small craft.

Ile du Havre Aubert Light is shown from a white hexagonal tower situated on Cap du Sud.

The village of Millerand, with an L-shaped wharf, is situated at the head of Anse a la Cabane. The wharf is 103m long; the outer face, bordered on the S side by a breakwater, is 135m long. In 1994, the depth alongside was 2.m. Another breakwater, 330m long, and which exhibits a light from a square skeleton tower at its outer end, lies to the E; the entrance between the wharf and the breakwater is 59m wide. Due to continual silting, depths vary but dredging is sometimes carried out.

Off-lying bank.— Le Fond Georges, a rocky fishing ground with a least depth of 16.5m, lies about 15 miles SE of the light on Cap du Sud.

The W coast of Ile du Havre Aubert is formed of red cliffs about 31m high, which extend N from Le Gros Cap to Etang de l'Ouest, about 2 miles NNW, where there is a small boat harbor. Shoal water extends up to 0.5 mile off this section of the coast and the bottom is irregular.

6.9 West Coast of Ile du Cap aux Mueles—Ile aux Goelands (47˚22'N., 61˚58'W.), about 19m high, is small and rocky, and lies close off Cap aux Meules.

Rocky Bank, with a least charted depth of 5.8m, lies about 2 miles SW of Ile aux Goelands. Shoal water extends E from this bank to the coast and shoal depths of 8.2 to 9.1m lie up to 2 miles to the W and NW.

Cap a Savage, about 0.3 mile NE of Ile aux Goelands, is rocky and formed of steep cliffs. A breakwater, about 305m long, extends SW from the S side of the cape and nearly closes the gap between Ile aux Goelands and the shore. A visible wreck lies at the end of the cape.

Off-lying Danger.—White Horse Rocks, about 5 miles W of Ile aux Goelands, are a group of pinnacles about 0.1 mile in diameter, with a least depth of 3.7m. The sea usually breaks upon these rocks and irregular depths lie to the N and NW.

Etang du Nord lies close NE of Ile aux Goelands and is entered between Cap a Savage and another point nearly 0.5 mile N. The shores of the inlet form a near perfect sandy semi-circle and are partially protected by two breakwaters. The N breakwater is 355m long with a depth of 4.3m at the outer end. The S breakwater is 416m long.

Lights are shown from the end of each breakwater.

Depths—Limitations.—There are two public wharves. The first, 215m long, with depths 0.3 to 2.1m, lies along their inside face of the N breakwater. The other is T-shaped, extending 123m W from the shore to an outer face, 73m long. There is a spur extending 54m S from its central part. Depths vary from 0.4 to 1.42m alongside.

The coast of Ile du Cap aux Mueles, from **Pointe Herissee** (Cap du Phare) (47˚23'N., 61˚58'W.) to Cap de l'Hopital, about 3 miles NE, is rocky with mainly red sandstone cliffs. Anse de l'Hopital, a small harbor SE of the cape, has a wharf in ruins.

A light is shown from a circular tower with a concrete base on Pointe Herissee.

Off-lying Dangers.—Pierre des Gros Cap, about 4 miles NW of Pointe Herissee, is a group of rocky patches with a least depth of 5.5m. It only breaks in very heavy weather and should not be approached by large vessels as it is steep-to on its S and W sides.

A group of rocky patches, with a least depth of 5.2m, lies from 3 to 4 miles NNE of Cap du l'Hopital.

Ile aux Loups (Wolf Island) (47˚32'N., 61˚43'W.), about 10 miles NE of Ile du Cap aux Mueles, located about in the center of Dune du Nord, consists of sandstone cliffs with sandy beaches and dunes to the NE and SW. There is a government wharf about 46m long, with a depth of 0.7m off the outer end, situated at the island. A slipway for small craft is situated immediately S of the root of the pier. A breakwater extends 190m NW from the shore, S of the pier.

There are numerous patches and shoals lying from 3 to 4.5 miles W of the island, the least depth being 7.8m. Another shoal, with a least depth of 11.9m, lies about 3.8 miles N of the W extremity of Ile aux Loups.

Grosse Ile (47˚37'N., 61˚31'W.), about 9.5 miles NE of Ile aux Loups, ends at its N end in Cap du Dauphin, a precipice of considerable elevation, but lower than Cap Nord Est. On the E side of Cap du Dauphin, two breakwaters protect a 100m long wharf. In 1998, there were depths of 2.2m in the entrance to the harbor and 1.6m inside the harbor.

Rochers du Dauphin and Rochers North Cape, some of which are 0.3m high, lie 1.5 miles WSW and 0.25 mile W, respectively, of the cape.

Glawson Patch, with a depth of 10.7m, lies about 5 miles W of Cap du Dauphin on the E end of a rocky bank that extends 2 miles farther SW.

Prince Edward Island

6.10 Prince Edward Island is the smallest of Canada's provinces, being only 120 miles long and about 30 miles wide near its E end. The island attains a height of about 142m above sea level, and is nearly trisected by the deep indentations of Malpeque Bay and by the mouth of the Hillsborough River, which almost meets Tracadie Bay on the N side. Its rich, red soil and red sandstone formations are distinctive features. Crescent-shaped, it lies in a great semicircular bay extending from Cape North, Cape Breton Island, to Miscou Island, New Brunswick, and is located in the S part of the Gulf of St. Lawrence.

The coast of Prince Edward Island presents a succession of large bays and projecting headlands. Of the latter, the most prominent are North Cape, West Point, and East Point, located as indicated by their names. The largest bays are those of Malpeque on the NW, Egmont the S, and Cardigan on the E. The surface of the island is gently rolling with the highest hills near the center and in the SE.

Prince Edward Island is separated from the mainland by the Northumberland Strait, which is described in paragraph 6.29.

The climate of the island is much milder than that of the adjoining mainland, and the air is usually free from the fogs which gather along the neighboring shores.

Northern Coast

6.11 The N coast of Prince Edward Island forms a long bight between East Point and North Cape, about 93 miles WNW. The harbors are small and limited with narrow entrances through sand bars, which become impassable in a heavy sea. The entire coast is exposed to N winds and NE gales and should be avoided at such times.

Tides—Currents.—The flood current sets S into the great bight formed by the N coast of Prince Edward Island, from North Point to St. Peters Bay, near the E end. Farther eastward, the flood, or SW current, which comes from between Iles de la Madeleine and Cape Breton Island, also sets towards the shore, especially near East Point. The ebb tidal currents appear to set in the opposite directions. The tidal currents meet and separate N of the entrance to St. Peters Bay.

Caution.—The channels through the bars of the harbors on the N coast are liable to be blocked or shifted by storms. Leading lights for these channels may be changed without special notice being given, and it is never safe for mariners without local knowledge to cross the bars.

North Lake Harbor from S

With the exception of a few places off the bars of the harbors, the anchorage is, generally speaking, very bad all along, the bottom being red sandstone, thinly covered, occasionally, with sand, gravel, and broken shells.

The harbors all have narrow entrances, between sandbars, with dangerous bars of sand, at various distances offshore. With the exception of Malpeque Bay and Cascumpeque Bay, they are only suitable for very small vessels, and, even at those mentioned, the breakers on their bars extend across them in bad weather with a heavy sea, leaving no visible channel.

East Point to St. Peters Bay

6.12 East Point (46˚27'N., 61˚58'W.), the E extremity of Prince Edward Island, is fully described in paragraph 6.20.

Between East Point and St. Peters Bay, 32 miles W, there are occasional short stretches of sandy beach at the mouths of small streams. Shallow water extends about 0.5 mile offshore, with the 18.3m line generally about 1 mile from the coast. The bottom is of sandstone.

North Lake, 4 miles W of East Point, is a boat harbor with an entrance channel 1m deep and 14m wide between breakwaters, and a pier on the E side of the basin. A bridge crosses the two breakwaters.

A light is shown from a square skeleton tower, 3m high, on the outer end of the W breakwater at the entrance to North Lake Harbor.

North Lake Harbor range lights, in line bearing 204.5˚, are shown from the E side of the harbor. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure.

Naufrage Harbor, 19 miles W of East Point, is a small boat basin entered between breakwaters 12m apart, with a reported depth of 1.5m inside the basin. There is a pier about 213m long in the harbor.

A road bridge, with a vertical clearance of 3.4m, spans the entrance close within the breakwaters.

Shipwreck Point Light (46˚28'N., 62˚25'W.) is shown from a white circular tower situated on the point close W of the harbor. A light is shown from a square skeleton tower on the outer end of the W breakwater.

6.13 St. Peters Bay (46˚27'N., 62˚45'W.), 14 miles W of Shipwreck Point, is approached over a sand bar with a depth in the channel of less than 2.4m and entered between encroaching sand spits which leave a narrow, shifting channel with less than 1.2m of water in some parts. The channel takes a sharp turn to the E immediately inside the entrance. The tidal currents in the entrance run at 3 to 4 knots maximum. Local experience and the latest information are essential to enter this bay safely.

Within the entrance, the bay trends ESE for 7 miles, with depths ranging from 3.7 to 5.2m. The village of St. Peters is situated at the head of the bay. Four rivers and some smaller streams flow into the bay. Morell River, on the S shore about 3 miles from the entrance, is navigable for boats 3 miles upstream. A railway bridge crosses the river near the mouth, and a highway bridge crosses about 0.5 mile farther upstream. The stretch of water between the bridges provides good shelter for boats. The channel is about 30.5m wide and from 2.4 to 4m deep. At the mouth, below the railway bridge, the channel is narrow with only 0.3m depth.

The boat basin at Red Head, 1 mile within the entrance, is entered between breakwaters 29m apart. The dimensions of the basin are approximately 183 by 122m, with a depth of 1.2m within.

North Lake Harbor from E

Aspect.—Range lights, in line bearing 200˚, are shown from the shore on the W side of the entrance to St. Peters Bay. Both front and rear lights are shown from square skeleton towers. The positions of these lights may be altered as necessary to suit the best channel.

A light is shown from a white square tower situated about 0.5 mile W of the entrance.

The channel through the bar and into the bay is buoyed.

Caution.—The leading lights and buoys are moved as necessary to suit the changing conditions, and the greatest care is needed.

Savage Harbor to Cape Tryon

6.14 Savage Harbor (46˚26'N., 62˚50'W.), 3 miles W of St. Peters Bay, is only suitable for small craft. The entrance lies at the W end of a long sandy ridge, protected by a retaining wall.

Local knowledge is essential.

Savage Harbor public pier, with a depth of about 1.2m alongside the face parallel to the shore, is situated on the W side of the harbor, 0.5 mile inside the entrance. A pier extends 61m from the E side of the wharf to a depth of 1.2m.

A light is exhibited from a red framework tower near the head of the breakwater at the E entrance point of the harbor.

Caution.—The channel is buoyed, but because of changing conditions, the light and buoys may be moved to indicate the best channel through the sand bar. Local information and knowledge are essential before attempting to enter this harbor.

Tracadie Bay (46˚25'N., 63˚02'W.), 8 miles W of Savage Harbor, lies at the W end of a range of sandhills 15 to 18m high. A shifting sand bar extends for 0.5 mile from the entrance, with a depth of 0.9 to 1.5m in the channel, only about 91m wide through the bar. Favorable weather and recent knowledge of the condition of the channel are necessary to cross the bar in safety. The maximum rate of the tidal currents in the entrance is about 2 knots.

Inside the entrance, the channel trends sharply to the E, close to the outer sand spit, with drying flats on the S side which extend E for over 1 mile. Beyond these flats, the bay deepens to about 3.7m and expands to a width of 2 miles. Winter Bay is a branch of the harbor extending to the W.

A U-shaped pier, with an outer face 61m long offering depths of 3m alongside near the NE corner where there is 1.5m alongside, is situated on the W shore, about 0.9 mile SE of the harbor. The N face of the wharf is 46m long with depths of 0.6 to 2.4m alongside. Good shelter is reported at this facility.

Grand Tracadie wharf light is shown from a 3.7m mast situated on the outer end of the aforementioned pier (46˚24'N., 63˚02'W.).

Range lights, in line bearing 186.5˚, are shown from the beach on the W side of the harbor entrance. The front light is shown from a white framework tower, and the rear light from a red skeleton tower. The lights are visible only when in alignment.

The channel over the bar is buoyed.

Caution.—Due to changing conditions, the range lights and buoys may be moved to indicate the best channel.

Cape Stanhope (46˚26'N., 63˚09'W.) lies 4 miles W of the entrance to Tracadie Bay. A reef extends nearly 0.75 mile from the cape to a depth of 5.5m, and 1 mile to the 9.1m line, but on parts of the reef within 0.5 mile of the shore there is only 0.3m of water over the rocks.

Savage Harbor

Cape Stanhope from NW

North Rustico Harbor

Covehead Bay, entered between Cape Stanhope and Cove Head, is navigable for small craft, but the depth on the outer bar is only 0.6m. A highway bridge, with a clearance of 2.7m, crosses the entrance. Close inside the bridge, on the E side, are two small wharves.

Covehead Harbor Light (46˚26'N., 63˚09'W.), 8.2m high, is shown from a red and white square tower on Cape Stanhope.

Covehead Bridge Light is shown from a mast on the highway bridge and is 2.4m high.

Range lights, in line bearing 194˚, are shown from the E shore of the entrance to Covehead Bay. The front light is shown from a square skeleton tower and is 4.6m high. The rear light is shown from a similar structure. The lights are visible only when in alignment. Due to frequent changes in the channel, these lights cannot always be followed.

Buoys marking the approach channel over the bar may be moved or lifted without advance notice.

6.15 Rustico Bay (46˚27'N., 63˚17'W.) is entered at the W end of Rustico Island over a shifting sand bar with depths in places of less than 0.6m. The channel is buoyed to suit the best water available, but local experience and the latest information are necessary to enter this bay safely. A causeway is situated at the E end of the island.

The bay branches into several rivers and small creeks. On the W side of the entrance, a breakwater protects the low beach. There are some fishing stages and sheds on the beach at North Rustico Harbor, and a boat basin with a reported depth of 1.2m At North Rustico Village there are two wharves within a basin dredged to 1.2m. The channel leading to this basin is marked by stakes.

Aspect.—Rustico Harbor Light is shown from a red skeleton tower on the outer end of the breakwater. Another light is shown on the SE corner of the inner breakwater; the light is obscured when bearing 175˚; however, the building which obscures the tower does not obscure the light.

A light is shown from a red skeleton tower on the outer end of the wharf at North Rustico village.

Orby Head (46˚30'N., 63˚20'W.), a red sandstone headland, 37m high, is bordered by shoal water to a distance of nearly 1 mile. This headline more or less divides the bight on the N side of Prince Edward Island into two parts and forms a good mark from both directions.

New London Bay (46˚31'N., 63˚29'W.), 6 miles W of Orby Head, lies at the W end of a long range of sandhills about 17m high. The entrance to the bay, about 0.2 mile wide, is obstructed by a shifting sand bar, with a depth of about 1.5m. Breakwaters protect the entrance on either side. Hope, Stanley, Southwest, and French Rivers discharge into the bay, and are navigable for short distances for small craft. A highway bridge crosses Stanley River about 1 mile above the mouth at the village of Stanley Bridge. A wharf, 53m long, extends along the edge of the channel, with a depth of 1.2m alongside.

French River Wharf, 1 mile above the river mouth, is 110m long with a depth of 1.5m at the face. A wharf parallels the highway bridge at New London, 2 miles above the mouth of Southwest River. It is 67m long with 1.2m of water on the SW side.

Range lights, in line bearing 211.5˚, are shown from the beach on the W side of the entrance to the bay. The front light is shown from a square skeleton tower. The rear light is shown from a white square tower.

The channel to the harbor is buoyed. The channel in the French River is marked by stakes and the channel in the Southwest River is marked by buoys and stakes.

Cape Tryon, 1.5 miles NW of the entrance to New London Bay, is a conspicuous cliff of red sandstone 33m high. The coast to the W as far as Cape Aylesbury, at the entrance to Malpeque Bay, is dangerous inside the 12.8m line.

Cape Tryon Light (46˚32'N., 63˚30'W.) is shown from a white square tower on the extremity of the cape.

Malpeque Bay

6.16 Malpeque Bay (46˚34'N., 63˚42'W.), about 8 miles W of Cape Tryon, is entered through Ship Channel, between Cape Aylesbury and Billhook Island. The bay extends 8 miles inland to within 3 miles of the SW coast of Prince Edward Island, and a narrow passage runs NW inside Hog Island for 16 miles, where it expands into Cascumpeque Bay. Malpeque Bay

contains several islands, and many small rivers and creeks flow into it.

Ship Channel is obstructed by a bar which extends 3.5 miles E from Billhook Island, with depths of 3m in the fairway of the buoyed channel. In bad weather, all signs of the channel are obliterated by heavy breakers. The bottom is of sandstone thinly and unevenly covered with sand. The channel deepens inside the bar, but the depths are very uneven and there are shoals on either side of the fairway. The channel shifts, and local experience and the latest information are essential for safe entry.

Mean spring tides rise 1.3m and mean neaps rise 1m. Mean sea level is 0.5m above datum.

Ice.—The bay freezes about the middle of December, and is not usually clear of ice until early May.

Tides—Currents.—In Ship Channel, the tidal flow is from 1 to 2 knots. The currents are strongest just inside Malpeque Harbor and off Royalty Sand. Farther in the bay, the currents are much weaker and seldom reach a rate of 1 knot.

Aspect.—Range lights, in line bearing 233˚, situated on the shore SE of Cape Aylesbury, lead in SW from the approach buoy. The front light is shown from a white square tower. The rear light is shown from a similar structure.

Two sets of range lights are shown from Billhook Island. The front light of the inner approach channel range lights, in line bearing 280˚, is shown from a square framework tower, white daymark, red stripe, 8m high, on Billhook Island. The rear light (similar daymark, red framework tower) lies 451m W of the front light.

The lights are visible on the leading line only and are shown from April to December.

Malpeque Harbor leading lights, in line bearing 038.75˚, indicate the fairway from Ship Channel into the harbor. The front light, 4m high, is shown from a square skeleton tower. The rear light, 7m high, is shown from a similar structure, situated 75m NE of the front light.

Range lights are also shown from the head of Darnley Basin, in line bearing 140.5˚, the small inner boat harbor to the SE of Ship Channel. Both front and rear lights are shown from similar square skeleton towers.

Darnley Basin North and South lights are both shown at an elevation of 4.6m from the center span of the bridge at **Burial Point** (46˚32'N., 63˚40'W.).

Anchorage.—Malpeque Harbor, the area immediately inside Ship Channel and S of Billhook Island, has sufficient room and depth for anchoring. The bar outside prevents the sea from entering, and Horseshoe Shoals shelter the anchorage from the W. There are depths of 4 to 18m and good holding ground of sand and clay.

Temporary anchorage can be taken outside the bar in good weather near the approach range line in depths of 9 to 13m, sand. The anchorage should be cleared on any sign of increasing N winds.

Caution.—The position of these lights is changed to suit the best channel prevailing, and they should not be used without the latest local information.

The inner approach channel and the shoal limits in Malpeque Harbor are buoyed.

Malpeque (46˚32'N., 63˚41'W.), one of the oldest settlements on the island, is situated on the neck of land between Darnley Basin and March Water. There is a small boat harbor in the cove 0.35 mile S of Royalty Point. The buoyed channel to Darnley Basin leads through Darnley Spit, nearly 1 mile E of Darnley Point.

Depths—Limitations.—The government wharf at the head of Bentinck Cove, in the SW corner of Malpeque Bay, has a reported depth of 1.8m at the outer end. To the SW of Black Point, on the S shore of Ellis River, is a wharf, 116m long, with a depth of 1.2m at the head. The ruins of two wharves lie downstream from this wharf, one on each side of the river. A small wharf is situated on the S bank of Ellis River, 2 miles above Black Point.

Port Hill Wharf is situated on the S side of Lennox Channel at the NW end of Malpeque Bay. A bridge, with a vertical clearance of 2.4m, crosses Lennox Channel from Sharp Point to a wharf on Lennox Island, an Indian reserve. A light, 4m high, is shown from a square skeleton tower on the end of the wharf at Port Hill.

On the W side of Goodwood River at Bideford there is a wharf, 82m long, with 0.9m depth at the end.

Aspect.—Summerside Air Station is situated 1 mile S of Bentinck Cove at the SW end of Malpeque Bay. Red lights mark the control tower.

The coast between Billhook Island and the entrance to Cascumpeque Bay, 18 miles NW, is formed of sand dunes and beaches from which shallow water extends 0.75 mile to the 5.5m line. The 9.1m contour roughly parallels the shore about 1 mile off. The narrows, an inside passage with very little water, drying in places, connects Malpeque and Cascumpeque Bays.

Conway Inlet, a small entrance through the sand dunes to the inner channel, has but 1m of water over the bar, but due to silting, the depth may be less. It is used by small craft at HW during good weather. There is a small wharf just within the entrance.

Conway Inlet Light (46˚39'N., 63˚53'W.) is shown from a framework tower, 5m high, situated on the W side of Conway Inlet.

Cascumpeque Bay

6.17 Alberton Harbor (46˚48'N., 64˚04'W.) (World Port Index No. 5710), at the N end of Cascumpeque Bay, just inside the entrance channel, is sheltered and has fair anchorage depths for small vessels. The approach is obstructed by a shifting sandbar. The least depth in the channel over the outer bar (about 0.9 mile ESE of Cascumpeque Light) was reported to be about 2.7m, but this is liable to vary. Mariners are cautioned that, under certain conditions of tides and weather, the entrance channel becomes impossible to navigate because of breakers. Inside the entrance there is a clear channel which trends SW for 1 mile, then turns S between Savage Island and Cascumpeque Point.

As the channel through the bar constantly shifts, local knowledge is essential to enter this harbor safely.

Ice.—The harbor usually freezes over in early January, and normally is clear of ice by the first week of April.

Tides—Currents.—The normal maximum rate of the tidal currents in the entrance is 1.5 knots, but in certain conditions they can exceed 4 knots.

Depths—Limitations.—Queens Wharf is 131m long with a T-head 38m long, with depths of 2.4 to 3m alongside the head. The Railway Wharf is 123m long with an T-head 100m long, with a depth of 1.8 to 4.9m. There is a transit shed and a lobster cannery on the wharf.

An L-shaped breakwater and marine railway, both in disrepair, lie close NE of Queens Wharf.

At Gordon Point, near the mouth of Foxley River, there is a small government pier. The pier is T-shaped and extends 70m from the shore to an outer end 9m long with depths of 0.6 to 0.9m alongside. The breakwater close E is in disrepair.

Cascumpeque Bay is very shallow, with a maximum depth of 4.9m in the center, surrounded by large areas of very shallow water and drying flats. Several rivers, navigable for some distance by boats, indent the bay. The deepest of these is Foxley River, with a stretch of channel with depths ranging from 3 to 11.3m extending about 2 miles upstream from the mouth.

Aspect.—Cascumpeque Light, 18m high, is displayed from a square skeleton tower, situated on the sandhills to the S of the entrance.

Range lights, in line bearing 306.5˚, for the outer approach channel, are shown from the sand dunes N of Kildare Point. Both lights are shown from similar square skeleton towers.

Inner range lights, in line bearing 273˚, are shown from the shore to the E of Alberton, and lead through the buoyed channel to the point of intersection with the harbor range. Both lights are shown from similar structures consisting of square skeleton towers. The front light is shown from an elevation of 7.6m; the rear light is shown from an elevation of 12.8m.

Range lights, in line bearing 245˚, are shown from Northport, and lead from the inner end of the buoyed channel to the wharves at Alberton. The front light is shown from a square skeleton tower on the roof of a shed near the outer end of the Railway Wharf. The rear light is shown from a white enclosed tower with sloping sides situated on the shore. The lights are visible only when in alignment.

The entrance channel is marked by buoys from the outer bar to Sandy Island, about 0.5 mile within the entrance.

The range lights and channel buoys may be moved at any time to conform with the best channel leading into the bay. Vessels should not attempt to enter without local knowledge.

Anchorage.—In good weather, temporary anchorage may be had off the outer bar in about 11m, sand. The anchorage in the channel within the entrance is secure but confined, in about 5.5 to 9.1m.

Cape Kildare to North Cape

6.18 Cape Kildare (46˚53'N., 63˚59'W.), about 5 miles NNE of the entrance to Alberton Harbor, is a cliff of red sandstone about 9.1m high. The surrounding land is red and topped with clumps of trees. There are no high sandhills N of Alberton Harbor. Shoal water extends nearly 1.5 miles from Cape Kildare, and there are irregular depths of 5.5 to 9.1m extending in places to 2 miles offshore along the whole 16 mile stretch of coast from Alberton Harbor to North Cape.

Tignish Harbor, 4.5 miles N of Cape Kildare, at the mouth of Tignish River, is protected at the entrance by long breakwaters on either side. The channel between them, Tignish Run, is about 46m wide with a least reported depth of 0.9m. At the inner end of this channel is a small craft harbor used by fishing vessels.

Tignish Run

A small basin and a public wharf are situated at Jude's Point, on the NW side of the harbor, about 0.4 mile WNW from Big Tignish Light. Depths alongside are from 1.2 to 2.5m.

Two basins, one on the N side and the other on the S side, lie close W of Tignish Run. Depths are from 1.2 to 2.5m.

The following are useful marks: **Big Tignish Light** (46˚57.1'N., 63˚59.7'W.) (white tower, 8m high) stands on the N side of the entrance. Big Tignish Breakwater Light (framework tower, 4m high) stands on the head of the N breakwater.

North Cape East Light (47˚02'N., 63˚59'W.), 4.6m high, is situated on the outer end of the south breakwater at Seacow Pond, about 5 miles N of Tignish.

North Cape (North Point) (47˚03'N., 64˚00'W.), the N extremity of Prince Edward Island, is a low red cliff with reefs and shallow water extending N and E for 1 mile to the 5.5m line and 2 miles to a depth of 9.1m. Irregular depths continue N, terminating in North Cape Reef, 4 miles off, with a depth of 9.8m about 5 miles offshore. This reef is steep-to at its W edge.

North Cape Light is shown from a white octagonal tower.

A radio tower, at an elevation of 83m and marked by red lights, stands on North Cape.

Caution.—North Cape Reef lies outside the lighted buoy moored N of North Cape.

North Cape Light

North Cape from NE

North Cape from N

North Cape from SE

Southeast Coast

6.19 East Point (46˚27'N., 61˚58'W.), the E extremity of Prince Edward Island, is formed of red sandstone cliffs, 9.1 to 18.3m high. A reef extends about 0.5 mile off the point, and shoal water lies nearly 1 mile further offshore in an E direction. The point shelters the shore from N and NW winds.

East Point Light is shown from a white octagonal tower, with a white dwelling nearby.

The tidal currents set very strongly toward the point and attain a rate of 2.5 knots over the bordering East Point Reef and between East Point and the N end of Milne Bank. Tide rips are frequently present off the point.

There is good anchorage in N winds, to the SW of East Point as far as South Lake outlet, a distance of 5 miles, with moderate depths of 10 to 15m and red sand bottom.

Milne Bank covers a large area to the S of East Point. The bottom is of sandstone thinly covered in places with red sand, and the depths vary between 11 to 16.5m over the N part, with a least depth of 9.8m near the S edge of the bank. The E edge of the bank is steep-to and tide rips are frequently seen when the tidal current is flowing to the SW. In strong NE gales, the sea can be very heavy.

From East Point to Basin Head, the coast is formed of sand hills and beaches. South Lake is a narrow, shallow pond inside the sand dunes, with a drying outlet. Cliffs commence at Basin Head.

Basin Head Harbour Light (46˚23'N., 62˚07'W.) is shown from a tower on the outer end of the S breakwater to this small drying boat harbor.

East Point Light

East Point from E

East Point from S

East Point from NE

McKinnon Point from NE

Shallop Rock, drying, lies on a reef extending 0.4 mile S from Red Point. From this point to Colville Bay, the coast is free of detached shoals, and the 18.3m line runs parallel to the shore, about 0.5 mile off.

From McKinnon Point, about 3 miles WSW of Basin Head Harbour, to Swanton Point, about 3 miles W, the coast is bold and clear.

Souris Harbour to Launching Point

6.20 Souris Harbour (46˚21'N., 62˚15'W.) (World Port Index No. 5730), on the E side of Colville Bay, is protected by a breakwater nearly 518m long. There is a depth of 6.7m in the entrance channel. The harbor usually freezes over early in January and is clear of ice by early May.

The town of Souris, a small community, is a fishing and farming center and the eastern terminal of the Prince Edward Island division of the Canadian National Railway.

There is a regular ferry service to Pictou, Ile de la Madeleine, and Sept Iles from April to December.

Fuel and diesel oil are available, and minor ship repairs can be undertaken.

Ice.—The harbor usually freezes over early in January and is clear of ice by early May.

Depths—Limitations.—The government wharf, inside the breakwater, is about 305m long and 43m wide, with a railway siding along its S side. There is a warehouse, 143m by 21m, on the wharf. The approach channel to the wharf, 91m wide, was dredged to a depth of 6.7m, but is subject to silting. The shipping berth, 183m long, on the N side of the wharf, had charted depths (1995) of 4.9 to 6.4m. The berth on the S side of the wharf is 160m long and had charted depths (1995) of 4.9 to 5.5m.

The Eastpack Wharf, N of the government wharf, has a berth on the S side 86m long, with a reported depth of 3m. There is a fish landing at the inner end of this berth, with a depth of 0.9m. Water is obtainable at the fish landing and on the government wharf.

A small boat basin is situated on the N side of Eastpack Wharf. Depths in the basin are from 0.9 to 2.1m.

A ferry terminal and wharf is situated close NW of the small boat basin. The wharf extends 76m from shore and has a reported depth of 4.2 to 4.5m.

Aspect.—The water tower, about 1 mile N of Knight Point, is prominent. The dome of the Roman Catholic Church and the spire of the United Church are both conspicuous marks.

Souris East Light is shown from a white square tower with a dwelling nearby on Knight Point, SE of the breakwater.

A light is exhibited from a square skeleton tower near the outer end of the breakwater.

Pilotage.—Pilotage is available, but not compulsory. To avoid delay in obtaining a pilot, vessels must report their ETA at the pilot boarding station, to "Pilots Souris" via any coastal radio station at least 12 hours in advance. Confirmation of ETA should be made not more than 6 hours later. Times must be in GMT. The pilot boarding station is in 46˚19'N, 62˚13'30'W.

The master of a vessel that is to take departure or make a move must report to "Pilots Souris" 6 hours prior to such ETD. The time should be local time; if GMT is used, it must be expressly specified.

Souris Harbour is under the control of the local authorities everywhere N of a line drawn from Swanton Point to Souris Head, about 1.8 miles WSW.

Anchorage.—The best anchorage is in a depth of 10.7m, sand, about 0.4 mile SW of the head of the breakwater.

Souris Ferry Terminal

Souris Light

Souris Harbor

Souris—Basin Head Breakwater

Between **Souris Head** (46˚20'N., 62˚17'W.), a wooded bluff, and Spry Point, 7 miles to the SW, there are several bays separated by sharp steep headlands and points of red sandstone. Shoal water extends offshore for 0.3 to 0.4 mile. Rollo Bay has a depth of 12.8m over sand, and is a poor anchorage with onshore winds. The W side of the bay has less depth because of silting from Fortune River.

Fortune Bay, an expansion of the river inside projecting sand spits and breakwaters, is only suitable for small craft, and can be navigated by shallow draft boats at HW as far as Fortune Bridge, 2 miles upstream. Inside the breakwater at the entrance is a government wharf 32m long with a head 21m long and a depth of 1.2 to 3m. On the S side of Fortune Bay there is a government wharf 33m long with a depth of 0.9 to 2.7m. The whole area is subject to rapid silting. Buoys mark the approach channel. A boat harbor is adjacent to the S wharf; its S face, 88m long, has a depth of 0.6m, the E face, 40m long, dries.

A sectored light is shown from a framework tower situated on the N wharf at the entrance to **Fortune River** (46˚20'N., 62˚21'W.).

Annandale from N

Annandale from SW

6.21 Boughton River (46˚15'N., 62˚24'W.), which flows into Boughton Bay, expands inside projecting points to form a shallow harbor. Sand bars build up outside the entrance and sand partly fills the bay. A narrow buoyed channel, with a depth of 0.9m over the bar, leads into the harbor.

Just within the entrance, at Banks Point, there is a government wharf at the town of Annandale, which has a pierhead 45m in length with a reported depth of 1.2 to 2.4m alongside. Range lights stand on and behind the point and in line bearing approximately 304˚ lead through the buoyed channel.

Launching Pond, more than 2 miles S of Annandale, provides shelter for small craft inside a basin which is entered between breakwaters. The entrance channel is subject to silting and the depth was reported to be only 0.3m, with 1.2m inside the basin. Lights are shown from square skeleton towers situated at the outer end of each breakwater.

Caution.—Vessels should not attempt to enter Boughton River without local knowledge, and the latest information on the entrance channel, the aids of which maybe shifted without advance notice.

Approaches to Georgetown

6.22 Boughton Island (46˚11'N., 62˚24'W.) is joined to the mainland by a drying sandbar, and surrounded by drying mud banks and ledges. Boughton Point, at the SE end, is a cliff of red sandstone 9.1m high. Shoal water extends 0.5 mile S of the point. Boughton Ledge, with some rocks above water at its outer end, extends 0.6 mile from the E side of the island, with shoal water continuing for 0.5 mile.

Cardigan Bay, 4 miles long to the mouth of Cardigan River, and 3 miles wide at the entrance between Boughton Point and Panmure Head, offers good anchorage with offshore winds in 11 to 18.3m, mud bottom. Cardigan River flows into the head of the bay on the NW side. MacPhee Shoal and Maitland Flat, on either side constrict the river mouth, but there is a buoyed channel with a least depth of 6.1m in the fairway for 5 miles above Cardigan Point, and small craft can proceed another 2 miles upstream as far as the causeway at the village of Cardigan. A public pier, with a berth 41m long, is situated near the S end of the causeway. Alongside depths at the outside corner and adjacent to the causeway are 1.8 and 0.3m, respectively.

The navigational aids are moved as necessary to mark the best channel.

A measured distance of 1,853.2m is situated in the approach to Cardigan Bay. The courses for running the range are 149˚ and 329˚. Each end of the range is marked by two beacons.

Panmure Island, on the SW side of Cardigan Bay, is partly wooded, and there are cliffs of red sandstone 12m high along the NE coast of the island. A narrow sandbar, always above-water, runs from Panmure Head to Smith Point, on the mainland. Panmure Ledge, with a depth of 1.5m near the outer end, extends 0.6 mile to the E from Panmure Head. Foul ground extends off Smith Point for about the same distance.

There is a government wharf on the W side of Panmure Island, with a small boat basin which was in a state of disrepair and not in use in 1990.

Panmure Head Light (46˚09'N., 62˚28'W.) is shown from a white octagonal tower with a dwelling nearby.

A lighted buoy is moored nearly 1 mile NE of Panmure Head Lighthouse.

Panmure Head from N

Georgetown Harbor

6.23 Inner Bays.—Livingstone Bay, Sturgeon Bay, and St. Marys Bay have a common entrance between Panmure Spit and the shoal off Grave Point. The entrance is narrow and shoals rapidly from a depth of 9.1 to 3.4m in places. The channel is intricate and local knowledge is essential for safe navigation. The three bays shoal to very little water towards their heads.

There is a wharf on the S side of Sturgeon Bay; length of the berth is 18m; extending to a depth of 0.6m. Another wharf, 58m long, adjoins the end of the highway on the E bank of the Sturgeon River. There is a dredged channel, marked by stakes, leading to this wharf. There was a least depth of 0.6m leading to this wharf, but the extreme outer ends dry alongside.

6.24 Georgetown Harbour (46˚11'N., 62˚32'W.) (World Port Index No. 5740) is situated on the SW side of the headland which terminates in Cardigan Point (Burnt Point), just below the junction of Brudenell River and Montague River. Thrumcap Spit protects the harbor on the SE side and

forms a small bay, bounded on the W side by Gaudin Point and its projecting sand spit.

Ice.—The harbor usually freezes over in late January and is clear of ice by the middle of April.

Tides—Currents.—Mean spring tides rise 1.9m and mean neaps rise 1.6m. The velocity of the tidal currents in the harbor rarely exceeds 0.75 knots.

Depths—Limitations.—Panmure Spit extends 0.35 mile NW from Billhook Point. Cardigan Shoal, on the N side of the approach, projects nearly 1 mile SW from Cardigan Point. The buoyed channel, about 0.2 mile wide, with a least depth of 8.2m at this point, passes between these shoals. Knoll Shoal, with a least depth of 2.7m, lies 0.5 mile NE of Grave Point, to the NE of the fairway. It is marked on the SW side by a lighted buoy.

The Railway Wharf on the W side has a berth 262m long had a reported depth of 8m. On the E side, the berth is 200m long, having the same reported depth. There is a heated warehouse and a railway track on the wharf. Fresh water is available.

Queen's Wharf is 190m long, with a reported depth of 3m at the outer end. Two ruined wharves lie between the Railway Wharf and Queen's Wharf.

Georgetown Shipyard, 0.25 mile E of Queen's Wharf, consists of a shipbuilding shed and two marine railways, one of 90 tons, and the second of 544 tons capacity. The shipyard also accommodates ships at the railway wharf. Mobile cranes are available up to a 45 ton capacity.

Aspect.—Range lights are shown from the SW side of the entrance to Georgetown Harbor. The front light is shown from a circular tower on St. Andrew Point (Wightmans Point). It is reported that the lights are visible only when in alignment. Mariners are cautioned that an abandoned lighthouse is situated about 65m S of the front light. The rear light is shown from a square tower, 11m high. These lights, in line bearing 280˚, lead between Cardigan Shoal and Panmure Spit.

A light is shown from a small tower on the roof of the freight shed on the railway wharf at Georgetown.

Three oil tanks are situated at the inner end of the Railway Wharf.

Pilotage.—Pilotage is available, but not compulsory. To avoid a delay in obtaining a pilot, the masters of ships bound for Georgetown must report via any coast station by radiotelephone or radiotelegraph their ETA to "Pilots Georgetown" at least 12 hours prior to arrival at the pilot boarding station. The ETA must be confirmed or corrected not more than 6 hours later. The time used must be GMT. The pilot boarding station is in 46˚08'30"N, 62˚20'30"W, about 3 miles SE of the SE extremity of Boughton Island. VHF channel 16 is used.

The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Georgetown" 6 hours prior to such ETD. Time used should be local. If GMT is used, it must be expressly stated.

Anchorage.—Between Cardigan Shoal and Knoll Shoal, there is anchorage in depths of 7.9 to 8.8m, mud. The best anchorage inside the harbor is between Thrumcap Spit and Gaudin Point Spit in about 9.1m, with the outer end of Queens Wharf in line with the square tower of the Anglican Church, an alignment of 011˚, having good holding ground. Smaller vessels can anchor closer to the shore according to draft. There is also good anchorage upstream near Brudenell Point. The rate of the tidal current is less than 1 knot.

Above Georgetown, the Brudenell River and Montague River unite at Brudenell Point. Brudenell River is navigable as far as Brudenell Islet, 1.25 miles above the mouth, and small craft can navigate as far as the head of tide, about 3 miles farther upstream.

6.25 **Montague** (46˚10'N., 62˚38'W.) is situated on both sides of the river, 4 miles upstream from Brudenell Point. The buoyed channel up the river has a depth of about 3m, subject to silting, and there is about 2.4m of water in the turning basin at the government wharf. Silting occurs, especially towards the W end of the basin.

The wharf at Lower Montague, on the S side of Montague River at its mouth, has an outer face of 24m and a depth of 2.7m. The sides are 40m long with depths from 0.3 to 2.7m. A light is shown from a skeleton tower situated on the NE corner of the wharf.

The E public wharf is 104m with a reported depth of 2.7m. The W public wharf is 49m with a reported depth of 2.1m.

A public marina, with several pontoon finger piers, lies opposite the public wharf. There are depths of 3.4m alongside. A light is shown from a skeleton tower situated on the NE corner of the wharf. At Aitken Point, E of Lower Montague, are the ruins of a wharf.

Smith Point to Cape Bear

6.26 Between **Smith Point** (46˚07'N., 62˚28'W.) and Terras Point (Cape Sharp), about 1 mile SSE, a shoal extends about 0.6 mile offshore. Graham Ledge runs out 1 mile from Graham Point to a depth of 2.1m. The depths between Panmure Head and Graham Point are very irregular within 3 miles of the shore.

Graham Pond provides shelter for small boats. The entrance through the sand bar is between breakwaters 10m apart. The depth at the entrance was reported to be 0.9 to 1.2m.

Murray Harbour (46˚01'N., 62˚30'W.) is formed by the junction of five rivers which expand into a partially drying shallow basin, that contains five wooded islands joined together at LW by drying mud flats. Poverty Beach, a sand spit extending S from Cody Point (Irvings Cape) for over 1.5 miles, closes the basin except for the narrow entrance passage between Sable Point, the S end of Poverty Beach, and Beach Point (Oldstore Point), a projecting spit on the S side of the channel.

A sand bar, with a least depth of 2.4m in the channel through it, extends to seaward for over 1 mile from the entrance. This channel is sometimes impassable in E winds because of the line of breakers which may extend from Cody Point to Murray Head.

Tides—Currents.—The combined tidal and current flow runs at 2 knots at Beach Point.

Aspect.—Inside the bar, the channel contracts to a width of little more than 90m, expanding again inside Beach Point. The depth increases gradually to a maximum of about 7.9m off the steep-to sandy beach of Beach Point.

Range lights, in line bearing 234˚ at the entrance, lead over the bar and through the channel to within about 0.2 mile of

Montague

Montague

Graham Pond from SE

Murray Harbour from NE

Murray Harbour from SE

Entrance to Murray Harbour from SE

Penny Point from SW

Beach Point. The front light is shown from a white square tower on Beach Point. The rear light is shown from a similar structure on Penny Point.

The approach channel is marked with lighted buoys. Inside Beach Point, the main channels are marked by lighted buoys, casks, and spar buoys, and by numerous stakes.

Murray Harbour village is situated at the head of navigation on the South River, 2 miles above Beach Point. A channel about 30m wide, in two courses, dredged to 2.7m, leads from a point 0.5 mile WSW of Sable Point to the government wharf at the village. The outer course is marked by lighted buoys and range lights to the entrance of South River, and the inner mile of channel is marked by stakes and another set of range lights.

The outer set of lights are shown from the shore near Machons Point. The front light is shown from a red skeleton tower. The rear light is shown from a similar structure. This range is in line bearing 273˚.

The inner pair of range lights, in line bearing 233.5˚, are shown from the shore near the village at the head of navigation. The front light is shown from a skeleton tower. The rear light is shown from a similar structure. The lights are visible only when in alignment.

Depths—Limitations.—The government wharf at Murray Harbour on the NW side of the channel is in four sections paralleling the channel; the sections are 22m, 73m, 55m, and 61m in length. There are depths of 1.8 to 2.4m alongside. The outer part dries at the extreme E end. On the opposite side of the river is a government wharf with a face 61m in length, with depths of 0.9m at the W end to 2.4m at the E end. There is a 500 pound cargo hoist on this wharf.

About 0.3 mile SW of Machons Point there is a government wharf extending to a depth of 1.2m.

Murray River Village, at the head of navigation on Murray River, has a government wharf on the S shore with a berth 64m long and a depth, in the central part of the wharf of 1.8m. The E end dries and the bridge has a depth of 0.6m alongside.

On Mink River, opposite the mouth of Greek River, there is a wharf that has an L-shaped berth, 12m long, having a depth of about 2.1m at the outer end. An adjoining wharf has an outer end 11m wide, with depths of 0.3 to 0.9m alongside. Several private moorings lie off the ends of these wharves. Cahoon Wharf, on Greek River, is 65m long, 15m across the face of the L-shape, with a depth of 1.5m alongside its head. The shallow channels to these wharves may not always be marked by buoys or stakes.

The church spire at Murray Harbour North, 0.7 mile WNW of Irvings Cape, is conspicuous.

Between Beach Point and Penny Point, on the S shore inside the harbor entrance, there is a government wharf with a pier head 24m in length. There is a boat slip near the center of the wharf. A staked channel leading to the pier head had a reported depth of 2.1m.

A light is shown from a square skeleton tower on the end of this wharf.

Clay and sandstone cliffs about 12.2m high run W from Murray Head toward Beach Point, and to the S toward Cape Bear.

Caution.—Aids to navigation may be moved without advance notice because of the continuous silting. This harbor should not be entered without local assistance and the latest information concerning channel depths, positions of buoys, and range lights.

6.27 Cape Bear (46˚00'N., 62˚28'W.) is the SE point of Prince Edward Island. A large rock 3.7m high lies close under

the cliffs of red sandstone, and another rock 2.1m high lies close off a point 0.6 mile SW of Cape Bear. A light is shown from the cape from a white square tower.

Cape Bear Light

Bear Reef, of sandstone and large stones, extends 0.75 mile E from the coast between Murray Head and Cape Bear to the 5.5m line, and 1 mile to 9.1m. There is little water over most of this extensive reef.

Fishermans Bank, 8 miles E of Murray Head, is of sandstone thinly covered with stones, gravel, and broken shells. The general depth over the bank is 11 to 16.5m, but there are two small areas near the central part of the bank with depths of 7.3m and 9.1m.

Caution.—Vessels should keep in depths greater than 18m when in the vicinity of Cape Bear.

Northumberland Strait

6.28 Northumberland Strait, about 160 miles long and from 5.5 to 30 miles wide, separates Prince Edward Island from the N and E shores, respectively, of Nova Scotia and New Brunswick. The E approach of the strait lies between Prince Edward Island and Cape Breton Island, about 30 miles to the E. The least depth in the middle of the fairway is 12m, and the navigable breadth of the narrowest part, Abegwait Passage, off **Cape Tormentine** (46˚08'N., 63˚46'W.), is 5.5 miles.

The S shores of Northumberland Strait from Cape George, Nova Scotia, at the E entrance of the strait, to Escuminac Point, New Brunswick, at the W entrance, are also indented by many bays and coves. At the E end the coast rises to a ridge of hills about 305m high, but generally the coast consists of low cliffs. Many rivers flow into the strait.

Because of the strong and variable tidal currents encountered in Northumberland Strait, very careful navigation is required.

Dense fogs seldom occur in Northumberland Strait. The prevailing SW wind of summer loses much of its moisture in passing over the land of Nova Scotia, and becomes a warm dry wind off its N coast. It acquires its moist and foggy character long before reaching the N shore of the gulf, and frequently before reaching Iles de la Madeleine.

Ice.—In a normal winter the ice builds up gradually along the S side of the estuary, spreads E from the New Brunswick coast through Northumberland Strait during the first half of January and then gradually fills the SW half of the gulf from Gaspe Peninsula to Cape Breton Island by the early part of February.

In December and January, new and grey ice is prevalent everywhere with thickness up to 0.15m. Floe size is generally under 91m and impedance to navigation arises only from ice sticking to a vessel's bow. In February, gray-white ice, 0.15 to 0.3m thick, becomes more common and in cold winters, white ice, 0.3 to 0.75m thick becomes the prevalent type. By March, this white ice is common even in a normal winter, but some proportion of the thinner categories is usually present because the ice is continually moving about.

Tides—Currents.—In the W entrance to the Northumberland Strait, there is a weak SE set into the strait, part of which eddies out again near the shore of Prince Edward Island. This weak SE set persists throughout the central part of the strait and is directed towards St. Georges Bay. In the E entrance there is an inset on the W side, part of which eddies N farther inshore, but which is mainly directed also towards St. Georges Bay.

Prior to the construction of the causeway across the Strait of Canso, there was a fairly strong set through the strait from St. Georges Bay towards the Atlantic Ocean. The former outset through the Strait of Canso has been replaced by a fairly strong NE outset along the shore of Cape Breton Island.

Under settled weather conditions the currents in the vicinity of Cape Tormentine and Port Borden are weak and somewhat uncertain in direction. In the Gulf of St. Lawrence, minor oscillations in sea level, generated by changes in meteorological conditions, are a frequent occurrence even in the summer months. There is a transport of water through Northumberland Strait, associated with these oscillations, which temporarily dominates the long-term flow. With the major meteorological disturbances, which generate storm surges, these temporary current movements will be strong and could reach rates of 2 knots between Cape Tormentine and Port Borden. These currents will be alternately W and E for periods of 12 to 14 hours, which approximately coincide with the periods during which sea level is raised and lowered by the surge.

In the Northumberland Strait, the characteristics of the tide and of the tidal current differ, in that there is a relatively large diurnal component in the former and only a fairly insignificant one in the latter. In consequence, there is no constant relationship between the occurrences of slack, or turn, of the tidal currents. The intervals between the two sets of occurrences will vary with astronomical conditions.

In the middle and N parts of the strait between Cape Tormentine and Port Borden, the tidal currents commence to flow E about 55 minutes before LW at Yarmouth, and W about 35 minutes before HW at Yarmouth. In the shallow water near the Tormentine shore, in charted depths of about 9.1m, the currents turn about 1 hour earlier than in mid-channel and even closer to the shore may turn still earlier. To the W, in the whole area between Richibucto Head and Cape Egmont, the currents

turn at about 30 minutes before the times of HW and LW at Yarmouth.

The horizontal flow is the result of tidal flow and current. The currents vary considerably with astronomical conditions and have quite appreciable effects upon the times at which SW of the resultant occur.

The tidal currents have their greatest rates, just over 2 knots, in the more restricted parts of the strait, that is between Cape Tormentine and Port Borden, between Cape Pele and Cape Egmont, and farther to the W, between Richibucto Head and West Point.

Directions.—Vessels proceeding through Northumberland Strait from the E should steer to clear Fishermans Bank, and then round **Wood Islands** (45˚57'N., 62˚45'W.), at a distance of about 3 miles. From a position about 7 miles SSW of **Prim Point Light** (46˚03'N., 63˚02'W.) a vessel can steer directly through Abegweit Passage to a position about 3.5 miles S of **Cape Egmont** (46˚24'N., 64˚08'W.). A vessel should then proceed approximately NE, midway between the cape and Egmont Bank, to pass about 3 miles off West Point.

North Side of Northumberland Strait

6.29 The S coast of Prince Edward Island, from **Cape Bear** (46˚00'N., 62˚28'W.) to Wood Islands, is formed of sandstone cliffs, in some places 12.2 to 15.2m high. There are few beaches or landings and no harbors along this very exposed stretch of coast. The 11m curve nearly parallels the shore at a distance of 0.5 mile, until approaching Wood Islands, where the shallow water extends 1 mile from shore.

There is a nearly drying sand spit at White Sands, about 4 miles WSW of Cape Bear, which affords some shelter to boats, and a sandy shoal extends 0.5 mile off-shore. The edge of this shoal is steep-to.

Little Sands Wharf at **McLean Cove** (45˚58'N., 62˚39'W.) is 52m long, with 0.9m of water off the inner face and 2.4m alongside the outer face. This is the only shelter between Cape Bear and Wood Islands available at all stages of the tide for small boats. The wharf was reported to be in a state of disrepair.

Wood Islands to Prim Point

6.30 Wood Islands (45˚57'N., 62˚45'W.) are separated by the dredged channel leading to the ferry terminal. They present sandstone cliffs to seaward, and the W island is joined to the main coast by a long sand bar with low dunes upon it. A road connects the mainland with the ferry wharf and the E island.

Depths—Limitations.—The terminal for the Caribou-Wood Islands Ferry lies in the enclosure between the islands and the connecting sand bar and road. Guard piers, each 183m long, protect the entrance channel, which is 61m wide. The approach to the ferry dock is 146m wide and dredged to a limiting depth of 4.3m. There are two ferry berths with depths up to 4.6m alongside.

On the E side of the ferry berths there is an L-shaped wharf, 170m long, which encloses a small craft harbor. The NW side of the wharf is used to land fish. Depths alongside are from 1.2 to 3.7m. A shallow patch, with depths of 1.2m, lies close off the SW face of the wharf. Depths within the harbor are about 2.1m.

Aspect.—Wood Islands Light is shown from a white square structure with a dwelling attached, on the S side of the E island.

Range lights, in line bearing 002.5˚, are shown on the E training pier. The front light is shown from a white square structure. The rear light is shown from a similar structure. The lights are visible only when in alignment.

Wood Islands Light from SE

Anchorage.—There is good anchorage in NW winds within 1 mile E of Wood Islands in depths of 5.5 to 16.5m, mud, according to draft.

Note.—Submarine cables, originating from the vicinity of 45˚46'N, 62˚47'W, cross the Strait, terminating at South Point and 1.5 miles W of South Point.

6.31 Indian Rocks (45˚56'N., 62˚47'W.) lie parallel to the coast between Wood Islands and Bell Point, with their S edge being 1.5 miles offshore. They dry in several spots near the W side. The area with less than 1.8m depth extends over 0.5 mile E and W, and about 0.3 mile N and S. The water is deep close S of these rocks, and breakers and tide rips are almost always present on the drying part. Tidal currents in the deep water close outside Indian Rocks frequently run at 3 knots.

The channel between Indian Rocks and the shoal water inshore is 0.5 mile wide, but depths are irregular and tidal currents strong, and it should only be used, with local knowledge, by small craft.

Bell Point, about 3 miles WNW of Wood Islands, is a sandstone cliff, 9.8m high.

Bell Point Reef, with a least depth of 1.2m, lies 0.7 mile S of the point and from there it extends about 0.8 mile to the E. The outer edge of this reef is steep-to, and it should be given a wide berth.

Belle River, 1 mile NW of Bell Point, has a small tidal harbor with a drying bar at the mouth. There are breakwaters on either side of the entrance and also several small wharves in the harbor with depths at the outer end of 0.3 to 1.2m.

Rifleman Reef extends 2 miles SW from Stewart Point. Near the outer point of the reef is a depth of 2.4m and there are several patches of 1.5 to 1.8m between it and the shore. The soundings off Rifleman Reef are very irregular, and the deep water close to it gives no warning of the presence of the reef. It should be given a wide berth.

Flat River, 2.5 miles NW of Stewart Point, is only suitable for small boats. Shoal water extends 1 mile SW from Jenyns Point, the SE entrance point of Flat River.

6.32 Pinette Harbour (46˚03'N., 62˚56'W.) is obstructed by Pinette Shoals, which extend 2 miles SW from Pinette Point. These shoals have depths of 1.2 to 1.8m just within their outer edge.

The harbor has a dangerous bar at its entrance, which dries in places. There is a channel over this bar with a reported depth of 1.5m.

McAulay Wharf, about 1 mile above Pinette Point, has depths of 0.9 to 2.1m on its E side. There is a wharf at the village of Pinette, 1.5 miles above Pinette Point. The wharf is situated at the highway bridge across the Middle Pinette River. The W portion, parallel to the channel, is 38m long with depths of 1.2 to 3m alongside. The E part is 30m long with depths of 0.6 to 2.1m alongside.

The dredged channel is marked by stakes. The bridge spanning the entrance to Middle Pinette River and Middle Creek at Selkirk Point has a vertical clearance of 1.2m.

Range lights, in line bearing 018˚, are shown from Pond Point at Pinette Harbor. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure.

Caution.—Considerable silting has been reported in the approaches to the Pinette River. Local knowledge is essential.

Approaches to Charlottetown

6.33 Hillsborough Bay, 7 miles wide at the entrance between Prim Point and St. Peters Island, opens into a broad expanse of water with many shoals and rocks. The NE part of the bay is seldom used by shipping, except the local fishing vessels, and its navigation should not be attempted without local knowledge or the services of a pilot.

A deep channel leads from the middle of the entrance to the bay and Charlottetown, the principal harbor and capital of Prince Edward Island.

Prim Point (46˚03'N., 63˚02'W.) the SE entrance point of Hillsborough Bay, presents low sandstone cliffs, 3 to 4.5m high, to seaward. Prim Reefs extend for 2.5 miles W from the point, and cover a large area to the N and S as well.

Prim Point Light is shown from a white circular tower situated close within the point.

Depths—Limitations.—On the N side of Prim Point there is a government wharf, 156m long with a depth of 1.8m at the outer end. This wharf was reported to be in ruins. A detached breakwater, 26m long, lies 60m NW of the outer end of the wharf.

Aspect.—Orwell Bay, the SE arm of Hillsborough Bay, leads to Orwell River, Vernon River, and Seal River. From Cameron Island to the NE, the drying shorebank increases in width until it stretches halfway across Orwell Bay.

Rocks, awash at LW, extend offshore for over 1 mile W from Buchanan Island.

Boats can ascend Vernon River through a channel marked by stakes, as far as Vernon Bridge, where there is a government wharf, 38m long with a depth of 0.6m at the face. There is a staked boat channel up Orwell River for more than 1 mile.

Pownal Bay is shallow and exposed to W winds. A large part of it dries, but there is some shelter for small craft near its head.

6.34 Governors Island (46˚08'N., 63˚04'W.), low and partly wooded, is surrounded by shoals, reefs and foul ground. Governors Shoal extends SW from the island for 2.5 miles, with many rocks and hazards. A submerged crib, with a depth of 0.3m, lies 1 mile SW of the island. Fitzroy Rock, with a depth of 6.1m, lies nearly 2 miles SW of the south point of Governors Island and is of considerable danger, especially in poor visibility.

Squaw Bay, NE of Governors Island, provides good anchorage for small vessels in depths of 2.7 to 4.6m, mud.

Note.—Two can buoys, marked A and B, lie 0.8 mile and 1.7 miles E, respectively, of Squaw Shoal and mark the S extremity of a small arms firing range which extends 1.5 miles SSW from **Squaw Point** (46˚11'N., 63˚03'W.).

6.35 St. Peters Island (46˚07'N., 63˚11'W.), located on the W side of the entrance to Hillsbourgh Bay, is of moderate height and fronted on the E side by cliffs of red clay and sandstone, 10.7m high. The central part of the island is wooded. St. Peters Shoals extend up to 2 miles off the island and St. Peters Island Bar, drying 0.3 to 1.2m, joins the island to

Rice Point. St. Peters Spit dries for over 1 mile from the NE point of the island and continues for another mile with depths of 0.3 to 0.6m.

St. Peters Road is sheltered by the island and spit, but with depths of 3 to 5m, it is only suitable as a small vessel anchorage.

Bacon Cove, at the SW end of St. Peters Road, dries at LW, but there is a small wharf on the S side. A channel dredged to 1.2m, marked by buoys, leads to the wharf. The depth alongside the outer end, 40m long, of the L-shaped pier is 0.3 to 0.9m.

The spire of a church, about 0.3 mile inland from Bacon Point, is conspicuous.

St. Peters Island Light is shown from a square tower on the SE side of the island.

A light is shown from a square skeleton tower on the outer end of the wharf at Bacon Cove.

An aviation light is shown from the vicinity of Charlottetown Airport, about 3.5 miles N of the harbor. The light tower has an elevation of 76m, and the light is reported visible from a considerable distance at sea.

Chartlottetown Harbour (46˚14'N., 63˚08'W.)

World Port Index No. 5750

6.36 Charlottetown, the principal port and capital of Prince Edward Island, lies at the junction of Hillsborough, Yorke (North), and Eliot (West) Rivers and N of the head of Hillsborough Bay. From seaward the harbor entrance is practically obscured. The approach channel leads from Northumberland Strait, NNE between St. Peter and Governor Islands, then NNW to the outer harbor entrance between Blockhouse and Seatrout Points.

The city is built mainly on the W bank of Hillsborough River, at its junction with Yorke River. The harbor is spacious and deep in the anchorage off the wharves, where the channel is nearly 0.3 mile wide.

The main imports are aggregates, petroleum products, and fertilizers. Potatoes are exported.

Ice.—The harbor usually freezes over about the end of December and is clear of ice by late April.

Tides—Currents.—Mean spring tides rise up to 2.8m and mean neaps rise up to 2.4m.

The tidal currents usually run at a rate of 2.5 knots in the harbor entrance and 1.75 knots off the waves. They continue to run for about a 15 minutes after HW and LW.

Depths—Limitations.—The channel leading through Hillsborough Bay to Charlottetown Harbor is in two reaches. The outer reach is 0.3 mile wide, with a least depth of 11m in the vicinity of Fitzroy Rock; but throughout the remainder of the approach the fairway is wider, with average depths of more than 15.2m. Inside the harbor there are depths of 12.8 to 18.3m off the wharves and depths of 6.1 to 9.1m in the entrance to Eliot River.

Spithead Shoal and Squaw Shoal, with depths of 2.4 and 3.3m, respectively, near the edge of the channel, lie about 2 miles SSE of the entrance near the junction of the first and second reaches.

Within the entrance the channel is steep-to with depths of 2.4 to 3.7m off Battery Point and 0.6 to 4m to the N of Blockhouse Point.

Pilots will take vessels up to 175m in length, with maximum draft of about 9.8m, into the harbor under good conditions.

The **Coast Guard Marine Terminal** (46˚13.8'N., 63˚07.5'W.) has a length of 136m and a depth of 7.8m on its SW side, which is for Coast Guard use only. The outer face is 91m long, with a depth of 9.2m. The NE side (Buntain Bell Wharf) has a reported depth of 4.8m.

The Marine Wharf has a length of 152m on its SW-NE sides and a depth of 3.6m. The outer face has an alongside depth of 6.4m. There is a large red building with a weathercock.

The Texaco Canada Ltd. Wharf has a length of 76m between its mooring dolphins and a depth of 8.4m. The wharf can accommodate vessels of 131m in length.

The Charlottetown Marine Terminal has a length of 152m on its SW side, with depths alongside of 3 to 9.1m. The outer face is 70m long, with a depth of 9.1m. The NE side is 183m, with depths of 3 to 9.1m. There is a railway track and two freight sheds available.

There are several other berths in the harbor with depths of 3.7 to 6.1m alongside.

A concrete oil loading platform is situated about 0.3 mile NE of the head of the Marine Terminal. Private red mooring buoys are situated NE and W of the platform, and a submerged pipeline leads to an abutment close N.

A marina is situated between the Texaco and Coast Guard wharves with 122 pontoon berths. Vessels up to 21m in length can be accommodated. Reported depths alongside are 1.2 to 5.2m.

The Hillsborough River is bridged just above the harbor. The navigation span has a vertical clearance of 4m and small vessels can navigate the river for several miles above the port. The piers of a former bridge lie close SW of the present one.

Aspect.—The twin steeples of the Roman Catholic Cathedral are easily identified. The spires of St. Pauls Church and St. James Church are also prominent. A chimney, 63m high, at the power station N of the railway wharf and marked with red obstruction lights, is conspicuous.

A radio tower, 80m high and marked by obstruction lights, is situated about 0.8 mile W of Blockhouse Point.

Approach range lights are shown from Haszard Point, about 2 miles E of Seatrout Point. These lights, in line bearing 019.5˚ and visible only when in alignment, lead up the bay, close W of Fitzroy Rock, to the intersection of the Brighton Point range lights.

Brighton Point range lights, for the inner reach, are shown from the E shore of Yorke River entrance. The front light is exhibited from a white square tower. The rear light is exhibited from a hexagonal tower. These lights, in line bearing 337˚, lead between Spithead and Squaw Shoal, through the entrance of the harbor to the intersection of the Warren Cove range lights. These lights are visible only when in alignment.

A lighted buoy is moored SW of Fitzroy Rock, and close E of the line of the Haszard Point range lights.

Blockhouse Point Light (46˚11'N., 63˚08'W.) is shown from a white square tower, with a dwelling attached.

Charlottetown Harbor—Marine Terminal

Charlottetown from SW

Charlottetown—Canadian Coast Guard Marine Terminal

Charlottetown—Hillsborough Bridge

Charlottetown Waterfront

Range lights are shown on the S side of Warren Cove. The front light is exhibited from a white square tower. The rear light is exhibited from a similar structure. These lights, in line bearing 197.5˚, lead to the wharves at Charlottetown.

Pilotage.—Pilotage is compulsory. To avoid a delay in obtaining a pilot, the masters of vessels bound for Charlottetown must report via any coast station by radiotelephone or radiotelegraph their ETA to "Pilots Charlottetown" at least 12 hours before arrival at the pilot boarding station. The ETA must be confirmed or corrected not more than 6 hours later. The time used must be GMT. The pilot boarding station is in 46˚00'W, 63˚08'W, about 5 miles SW of Prim Point Light. There is no alternate area in the event of foul weather.

The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Charlottetown" 6 hours prior to such ETD. The time used should be local time. If GMT is used, it must be expressly stated.

Anchorage.—There is good anchorage in depths between 8 and 17m in the area in which the three rivers meet, but the usual anchorage is off the wharves, where the channel is more than 0.2 mile wide, with depths of 12 to 18m.

Rice Point to Seacow Head

6.37 Rice Point (46˚08'N., 63˚13'W.), on the shore just within St. Peters Island, marks the shift in the coast from Hillsborough Bay to a straight and nearly unbroken shoreline extending WNW for nearly 8 miles to Black Point. Canoe Cove (Allen Cove) is the only indentation and the ruins of a detached breakwater lie in its entrance.

Shoal ground extends about 0.8 mile offshore in places along this stretch of the coast. Inman Rock, with a least depth of 1.2m, and Inman Reef, with a depth of 6.4m, lie about 0.8 mile SW and 1.5 miles SSE, respectively, of Black Point.

A television tower, marked by obstruction lights, stands at an elevation of 326m on the hills about 3.5 miles NE of Black Point.

De Sable River, which nearly dries, is entered between Black Point and Brocklesby Head, about 2.5 miles SW. The latter, which is about 4.6m high, is formed of gray clay cliffs. A reef, with depths of less than 5.5m, extends nearly 1 mile S from the head.

Tryon Shoals (46˚11'N., 63˚31'W.) dry for over 1.5 miles S of Birch Point and Tryon Head (Pauls Bluff). These shoals are not very steep-to and appear to be extending to the E. The tidal currents meet off them and frequently set down in their direction, requiring great care when navigating in the vicinity.

A light and bell buoy is moored about 1.8 miles S of Tryon Shoals.

6.38 Victoria Harbor (46˚13'N., 63˚29'W.) (World Port Index No. 5760) is a small shallow anchorage off the mouth of Westmorland River, entered between Tryon Shoals and Brocklesby Head. As sand from Tryon Shoals encroaches to the E, the narrow channel leading to this anchorage may have less depth than charted. The depth on the range line was reported to be 0.3m. The anchorage space, with depths of 2.1 to 4.3m, is only about 0.3 mile long and 0.15 mile wide, but there is a larger area with depths between 2.1m and 2.7m, close to the E.

Depths—Limitations.—At the village of Victoria, at the mouth of the river, there is a government wharf, 122m long. The wharf has depths of 1.2 to 1.8m on the E side and 1.5 to 2.4m on the W side, although caution is necessary as it has been reported that shoaling has reduced the depths to as little as 1.2m in the approach and 0.3m alongside. On either side of the government wharf are the ruins of old wharves.

A causeway and bridge span the Westmorland River about 107m E of the wharf. The bridge has a vertical clearance of 1.8m.

Aspect.—Leards range lights are shown on the shore at the village of Victoria. The front light is shown from a white tower, 8m high, at the NW end of the bridge. The rear light is displayed from a similar structure about 0.5 mile NNW. The alignment (328.5˚) of these lights leads towards the harbor.

Wrights range lights are shown from the NW side of the harbor. The front light is shown from a white tower, 3m high, on **Pauls Bluff** (46˚12.3'N., 63˚29.3'W.). The rear light is shown from a similar structure, 9m high. It is situated 695m WNW of the front light. The alignment (295.5˚) of these lights leads N of Tryon Shoals.

Victoria Harbor from S

Palmers range lights lead through the channel to the government wharf. The front light (white trapezium daymark, red stripe, on a framework tower, 6m high) (46˚12.8'N., 63˚29.4'W.) is shown near the NW end of the bridge. The rear light (white inverted trapezium, red stripe, on a square tower) is 120m N of the front light.

The alignment (001.75˚) of these lights leads through the buoyed channel to the wharf at Victoria, in a least depth of 1.8m, which improves to about 3m when within 0.3 mile of the wharf.

In the anchorage, tidal currents are weak and irregular, but sometimes reach 1.5 knots for short periods along the edge of the shoals and in the entrance.

Tryon River flows out on the E side of Tryon Head through the drying sands of Tryon Shoals. Small craft enter the river near HW.

Between Tryon Head and Bells Point, 4.5 miles W, the coast is indented by three drying coves separated by bluff points. The 9.1m line runs about 2 miles S of Tryon Head and approaches the coast within 0.5 mile off Bells Point.

6.39 Port Borden (46˚15'N., 63˚42'W.) is formed by a railway pier extending 0.35 mile SE from Borden Point. A guard breakwater attached to the outer end of the pier runs for 122m in a SW direction. A detached breakwater, 0.1 mile long, running in a NE-SW direction, lies 0.1 mile SE of the outer end of the pier. There is a depth of 7.6m in the ferry berth. The least charted depth in the turning basin inside the entrance was 5.6m in 1992.

Depths—Limitations.—A public wharf, with an L-shaped head used by fishermen, extends 220m SE from the head of the harbor; the depth alongside the pier head is 1.3m.

Aspect.—A light is shown from a red skeleton tower on the outer end of the detached breakwater. Another light is shown from a white pyramidal tower situated on the outer end of the railway pier.

Caution.—Local knowledge is recommended for entering Port Borden. Pilots are reported to be available, but only on an emergency basis, as the berths are designed mainly for the ro-ro service.

A fixed highway bridge crosses Abegweit Passage from Port Borden SW to Jourimain Island, NW of Cape Tormentine. See paragraph 6.58 for further information.

Approaches to Summerside

6.40 Between Borden Point and Seacow Head, a low flat point, 6 miles NW, the coast is indented with several coves divided by points of red sandstone and clay cliffs. There is anchorage for small craft, with offshore winds, in good weather.

Seacow Head Light (46˚19'N., 63˚49'W.) is exhibited from a white octagonal tower situated on the SW extremity of the headland.

Bedeque Bay (46˚20'N., 63˚52'W.), shallow and open, contains Summerside Harbour and Sunbury Cove. Shallow water extends across the mouth of the bay from Seacow Head and continues along the coast to Cape Egmont, 15 miles distant. Miscouche Point, a peninsula on the N coast, is fronted by the extensive Miscouche Bank, which dries for nearly 1.5 miles S of the point.

A radio tower, with red air obstruction lights, is situated on the E side of Miscouche Point.

Anchorage.—The roadstead lies between the E side of Miscouche Bank and the shoals extending from the E side of the bay, between Graham Head and Indian Spit. There is a safe summer anchorage in 6.1m, sand and clay, but open to S winds.

Seacow Head from SE

Seacow Head from NW

The shoals and land on both E and W sides of the anchorage prevent heavy seas when the winds are from other directions.

Prohibited Anchorage.—There is an area designated for no anchoring, between Graham Head on Prince Edward Island, and Cape Bruin in New Brunswick. Its position can best be seen on the appropriate chart.

Caution.—A submarine cable area crosses Abegweit Passage from the vicinity of Cape Tormentine to the N shore, about 1.5 miles SE of Port Borden.

Indian Head (MacCallums Point) (46˚23'N., 63˚49'W.), 3.5 miles N of Seacow Head, is faced by sandstone cliffs, 7.6m high, and the land rises to about 15.2m inland. Two white square structures with red roofs, near Indian Head, resembling lighthouses, are conspicuous from seaward.

A breakwater extends from Indian Head to the outer end of Indian Spit. A light is shown from a white octagonal tower on a circular stone pier at the outer end of Indian Spit.

Summerside from N

Summerside (46˚24'N., 63˚47'W.)

World Port Index No. 5770

6.41 Summerside Harbour is entered through a narrow dredged and buoyed channel which commences about 0.3 mile W of Indian Head lighthouse, and leads ENE into the harbor.

The harbor, which is only 0.5 mile wide, has one government wharf, two piers for fishing boats, and a yacht basin. The town is built on the N side of the harbor.

Ice.—The average thickness of level shore-fast ice in Summerside is about 0.6m. Freeze-up usually begins about the middle of December, with a solid ice cover forming before the end of the month. Break-up normally begins during the first week of April, with the harbor clearing of ice by the fourth week of April. Two to five weeks variation in freeze-up and break-up can occur.

Tides—Currents.—Mean spring tides rise 2.2m and mean neaps rise 2m. Maximum current rates rarely exceed 2 knots.

Depths—Limitations.—The dredged entrance channel is reported to be maintained to a depth of 6.7m. Depths close W of the public wharf are dredged to 7.6m.

The largest vessel accommodated in Summerside was 167m long, beam 22.9m, with a draft of 7.3m

Alongside berths at Summerside are as follows:

Berth	Length	Depth
Transport Canada (public jetty)		
W side (outer 183m)	183m	7.3m
E side (outer 183m)	183m	3.6-5.5m
Holman Wharf		
E side (outer 91m)	91m	2.4m
Across outer face	—	1.5m
Queens Wharf		
E side	—	0.3m
Across head	47m	1.5m

Aspect.—Summerside outer leading lights, in line bearing 029˚, are shown from white square towers situated about 1 mile WNW of the government wharf.

A second set of range lights is shown from the vicinity of the government wharf. The front range light is shown from a red skeleton tower on a shed roof on the government wharf at Summerside. The rear light is shown from a white square tower on shore. These lights, in line bearing 072˚, lead through the channel into the harbor.

A conspicuous tower, 38m high, painted orange and white and marked by red air obstruction lights, is situated on top of a building about 0.1 mile N of Queen's Wharf.

A radio mast, with an elevation of 76m, marked by red air obstruction lights, is situated nearly 2 miles NE of the harbor.

A conspicuous red and white checkered water tank is situated about 1 mile N of the government wharf.

Wilmont River dries out at the mouth, on the E side of Summerside Harbor. The harbor channel turns to the SE just off the government wharf and a narrow tongue of water over 6.1m deep extends for 1.5 miles, between Holman Island and McDonald Point, towards the shallow mouth of Dunk River. The channel is not marked.

Pilotage.—Pilotage is available, but not compulsory. To avoid a delay in obtaining a pilot, the masters of vessels bound

Summerside from SE

Summerside

for Summerside must report via any coast station by radiotelephone or radiotelegraph their ETA to "Pilots Summerside" at least 12 hours before arrival at the pilot boarding station. The ETA must be confirmed or corrected not more than 6 hours later. The time used must be GMT. The pilot boarding station is situated at 46˚19'N, 63˚53'W, about 3 miles W of Seacow Head.

The master of a ship that is to depart or make a move must report to "Pilots Summerside" 6 hours prior to such ETD. The time used should be local time. If GMT is used, it must be expressly stated.

Bedeque Bay to West Point

6.42 From the W point of Bedeque Bay to Cape Egmont, shoal water extends off the coast for 1.25 miles to the 5.5m line. Fifteen Point can be identified by the conspicuous twin spires of Mount Carmel church, close to the point. The ruins of

Summerside from W

a detached breakwater, drying 0.9m, lie about 230m offshore and 0.5 mile W of Fifteen Point.

Cape Egmont (46˚24'N., 64˚08'W.), a prominent sandstone cliff about 15.2m high, lies on the NE side of what is sometimes refereed to as the central narrows. Shoal water borders the cape to a distance of about 1 mile to the SW, but lies over a considerable area to the NW.

Cape Egmont Light is shown from a white square tower on the S extremity of the cape.

A conspicuous microwave tower, 69m high, exhibiting red air obstruction lights, is situated 5 miles NE of Cape Egmont.

Egmont Bank (46˚23'N., 64˚14'W.), a narrow ridge of fine red sand with a least depth of 7.3m, commences 4 miles SW of Cape Egmont and extends 4 miles to the NW. There is a channel on either side of the bank, the S being deeper, with depths of 13.7 to 18.3m. The N channel, with depths of 11.9 to 13m, is generally recommended as it lies farther from the dangers on the NW side of the strait and closer to the light structures on Seacow Head and Cape Egmont.

Egmont Bay, between Cape Egmont and West Point, is an open bight 17 miles across between those points. The 9.1m line roughly follows the coast at a distance of up to 4 miles, and inshore of this line the water shoals rapidly. There is good anchorage with offshore winds, but vessels should not approach inside depths of 11m because of irregular shoaling.

At Fishing Cove, 1 mile N of Cape Egmont, there is a government wharf, 160m long. A breakwater extends S from the end of the wharf for 138m. A second breakwater extends to the west for 122m from the shore, forming an enclosed boat harbor. The depth in the basin is 0.6 to 1.2m.

Fishing Cove Light is shown from a red skeleton tower on the outer end of the E breakwater.

Fishing Cove West breakwater light is shown from a skeleton mast on the S end of the W breakwater.

Red Head (46˚25'N., 64˚08'W.), low and rocky, lies about 1.5 miles N of Cape Egmont. Dutchman Rock, which dries 1.2m, lies about 0.1 mile offshore, 0.5 mile farther to the N. Canoe Gully, entered 1.5 miles N of the head, is a narrow, shallow channel between sandbars, which leads to a boat basin at the mouth of Haldimand Creek. Rapid silting takes place, and the depth in Canoe Gully was reported to be 0.3m. Inside the boat basin, the depth was reported to be 0.3 to 1.2m.

Aspect.—Canoe Gully outer range lights are in line bearing 106˚. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure, close ESE.

Canoe Gully inner range lights are in line bearing 144˚. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure.

Egmont Bay Wharf sectored light is shown from a square skeleton tower situated on the SW corner of the wharf. The white sector indicates the preferred channel.

The twin domed towers and black roof of the church at St. Jacques, 5 miles N of Cape Egmont, are conspicuous from seaward.

Caution.—Shallow rocky ground extends off Red Head and the E shore of the bay.

6.43 The Enmore River and the Percival River flow into the head of Egmont Bay. They are approached by very narrow, intricate channels through partly drying flats of sand, clay, and oyster beds, extending 1.5 miles from the shore. The tide flows about 5 miles up these rivers between low marshy banks. These streams have a depth of 0.9 to 2.1m and the channels are buoyed or staked.

Egmont Bay Pier, 116m in length, with a cannery on it, is situated on the E side of the river, just below the bridge. This pier, together with another L-shaped wharf, form a boat basin with reported depths of 0.3 to 1.2m.

The entrances of Brae River and Wolfe Inlet, on the N shore of Egmont Bay, are obstructed by drying sandbars.

West Point (46˚37'N., 64˚23'W.) consists of sandhills 3.7m high. A breakwater and pier extend from the shore E of the point and form a boat harbor with a depth of 1.2m.

West Point Light is shown from a white square tower, on the beach close N of the point.

West Point Light

West Point range lights are in line bearing 007˚. The front light is shown from a square skeleton tower, situated on the outer end of the breakwater. The rear light is shown from a similar tower.

West Point Harbor

West Point Light from N

West Point from S

West Spit, of sand over sandstone, covered in places with only 1m or less of water, runs 3 miles NW from West Point. It nearly joins West Reef, a narrow rocky ridge with a least depth of 4.6m, lying 3.5 miles offshore at its N end. The narrow passage between West Reef and West Spit should not be attempted, as the soundings are irregular and the tidal currents strong, sometimes reaching a rate of 2.2 knots. The currents cause a heavy sea when running against the wind. The reef is marked by a lighted buoy on its W side.

Northwest Coast

6.44 Cape Wolfe (46˚43'N., 64˚24'W.), about 6 miles N of West Point, forms between itself and North Point, 27 miles NE, an almost unbroken coastal line. Red clay and sandstone cliffs, with stretches of sandy beaches, prevail along this shore, with shoal water extending to a considerable distance in places. It is prudent to remain to seaward of the 18.3m line when passing along this stretch of coast.

There are a few ponds and shallow inlets, where boats obtain shelter, but they are entered through narrow, nearly drying channels in the sandy beaches, which shift in heavy weather and sometimes are completely blocked.

Howard Cove, near Seal Point, lies 1.5 miles NE of Cape Wolfe, and has two breakwaters forming a small boat harbor, with a reported depths of 0.6 to 1.2m alongside the wharves inside the harbor and 1.2m in the entrance.

Howard Cove Light, shown from a white tower, is situated near Seal Point.

Seal Point Light (red triangle in white daymark, red framework tower, 6m high) is exhibited from the head of the longer breakwater.

Miminegash Pond (46˚53'N., 64˚14'W.) has two breakwaters protecting the channel into a boat basin, which has a least depth of 1.3m. Depths within the basin are from 1.2 to 2.2m.

Range lights, in line bearing 173˚, are shown at Miminegash. The front light is shown from a square skeleton tower on the outer end of the N breakwater. The rear light is shown from a similar structure on the shore.

Miminegash Reef, a nearly drying ledge of rocks, runs parallel to and 0.5 mile off the shore from abreast the entrance to Miminegash Pond to Cape Gage, and is marked by a lighted bell buoy 0.5 mile NE.

A boat basin at Skinner's Pond, about 6.5 miles NE of Miminegash Pond, has an entrance channel protected by two piers. Extending from the shore NE of the piers is a curving breakwater 195m long. Least depth in the entrance to the basin was reported to be 0.8m. In the basin depths are from 0.3 to 2.5m. A bridge crosses the channel near the inner end of the breakwater.

Skinner's Pond Light is shown from a square skeleton tower situated on the S pier. Another light is also shown from an aluminum circular mast situated on the outer end of the breakwater.

North Cape (47˚03'N., 64˚00'W.) is described in paragraph 6.19.

South Side of Northumberland Strait

6.45 The coast between **Cape George** (45˚52'N., 61˚54'W.) and Merigomish Harbour, 27 miles SW, is bold and free of off-lying dangers. The 11m line parallels the shore at a distance of less than 1 mile. The land rises to a ridge 2 to 3 miles inland and reaches a summit of 335m, 3.5 miles S of Arisaig Point.

There is a Government wharf at Livingstone Cove, 3.5 miles W of Cape George. The E face of the outer section, 21m long, has depths of 0.6 to 1.2m alongside. The E face of the inner

Entrance to Miminegash Pond

section, 52m long, has depths of 0.3 to 1.8m alongside. A light marks the head of the wharf.

A rock filled area adjacent to a sunken ship lies 4 miles SW of Livingstone Cove.

Malignant Cove, 10 miles SW of Cape George, has a small stream at its head and is a good landing place for boats. Sugarloaf Hill, 196m high, lies 1 mile inland.

Frenchmans Barn is a conspicuous rock formation 2 miles SW of Dunn Point, the SW point of Malignant Cove.

There is a small boat harbor on the W side of Arisaig Point, about 0.8 mile SW of Frenchmans Barn. A breakwater, 147m long, extends from the point. This breakwater has berthing space on its E side in depths of 0.6 to 1.2m. A second breakwater extends 85m from the shore on the SE side of the harbor. A public wharf, 107m long and 6.1m wide, with depths of 0.6 to 0.9m, is situated between the two breakwaters.

Range lights, in line bearing 090˚, are shown from the E side of Arisaig Harbor. The front light is shown from a red square skeleton tower. The rear light is shown from a similar structure.

Baillie Brook Wharf (45˚42'N., 62˚16'W.) has a fish curing and freezing plant. The mouth of Baillie Brook is enclosed between two breakwaters, 37m apart. Sandbars sometimes obstruct the entrance. The E breakwater, 194m long, has an L-head, 46m in length. The W breakwater is obstructed by ruins. There is a shallow dredged channel, with a reported depth of 0.3, leading to the fish plant and the public wharf, where there were reported depths of 0.6 to 1.2m alongside the 119m long berth.

Big Merigomish Island, 46m high, is composed of clay and sandstone, with thin seams of coal visible at Coal Point, where the cliffs are 10.7m high. A sand bar, 2.5 miles long, connects the E end of the island to the mainland.

6.46 Merigomish Harbour (45˚39'N., 62˚27'W.), entered between the W extremity of Big Merigomish Island and Kings Head, 0.75 mile W, is available as an anchorage to boats and small vessels with local knowledge. There is a depth of 4.3m over the bar, and a maximum depth of 10.1m in the harbor. Rocky shores extend 0.75 mile N of the entrance between Kings Head and Merigomish Point. The buoyed channel between the steep shoal banks is only 210m wide, and at the entrance to the inner harbor, between Savage Point and Dulse Rocks, it narrows to 90m. The tidal currents at this point frequently run at a rate of 5 knots, but within the harbor the rate is generally less than 1.5 knots.

The harbor extends 5 miles to the E within Big Merigomish Island, and also 4 miles SW up a bay containing many islands, coves, and precipitous headlands. Several small streams enter the area. French River is navigable for boats through a narrow staked channel as far as the bridge at the village of Merigomish.

A cable crosses the harbor from the mainland to Big Merigomish Island, 1.75 miles E of Savage Point.

Piers are situated within **Savage Cove** (45˚38.9'N., 62˚27'W.). Pilotage was reported (1993) to be compulsory.

Little Harbor, entered between Roy Island and Black Point (Evans Point), about 3.5 miles W of Merigomish Island, is only suitable for small boats. Narrow, intricate channels lead through drying flats into shallow inner basins, with only a few small pools where the depth is 1.8 to 3m.

Roy Ledge, a rocky shoal with a least depth of 3.4m, lies about 0.4 mile N of Roy Island. This part of the coast is foul inside the 11m line.

Between Little Harbor and the entrance to Pictou Harbour, the land is lower and shoal water extends farther off-shore. Roaring Bull Point presents a low cliff to seaward, marked by a

conspicuous red patch. A reef of sandstone extends for 0.3 mile NE from the point terminating in a rock drying 1.2m. Chance Harbor, to the E of the point, is nearly dry at LW. A public wharf is close W of Roaring Bull Point. The wharf is 89m long and 6.4m wide, with depths of 0.9 to 1.2m alongside the S face.

Caution.—Several oyster farms are situated in Little Harbor; the areas are marked by buoys at each corner and mariners are advised to proceed with care in their vicinity.

Approaches to Pictou

6.47 Mackenzie Head (45˚41'N., 62˚38'W.), 2 miles W of Roaring Bull Point, is a sharp pointed cliff of clay and sandstone, 12.2m high. Mackenzie Shoal is a rocky bank, with a least depth of 4.3m, which extends from 0.5 to 0.75 mile NE of Mackenzie Head. Vessels should not pass S of this shoal.

Pictou Road, between Mackenzie Head and Logans Point, about 2 miles NE, although open to NE winds, affords good anchorage in 9.1m, clay and mud, with Pictou Bar Lighthouse bearing 244˚, distant 2 miles.

MacDonald Reef extends 0.4 mile E of Logan Point, with a rock drying 0.3m near the outer edge of the reef. The 5.5m line runs almost parallel to the shore, about 0.4 mile off Cole Point, a clay and sandstone cliff 9.1m high. Cole Reef, with 0.9m near its outer end, extends nearly 0.4 mile E of the point.

Pictou Harbour (45˚40'N., 62˚42'W.)

World Port Index No. 5800

6.48 The entrance to Pictou Harbor lies between Lighthouse Beach (Pictou Bar Spit) and Lowdens (Louden) Beach, about 0.2 mile NW. About 2 miles inside the entrance, the harbor expands into three arms, the mouths of East, Middle, and West Rivers. A causeway blocks the entrance to West and Middle Rivers.

There is a regular sea freight service to Charlottetown and Iles de la Madeleine during the navigation season, which is important commercially in the coastal shipping trade. Pictou port makes major lumber shipments to overseas markets.

Ice.—The harbor is usually closed by ice from the beginning of January to mid-April.

Tides—Currents.—Mean spring tides rise 2m and mean neaps rise 1.6m.

The channel over the bar is only 122m wide, and the tidal currents sometimes attain a rate of 2.5 knots.

Depths—Limitations.—The least depth in the channel over the bar, on the alignment of the range lights, was 6.7m. Within the bar, depths of 9.1 to 13.7m extend nearly to the causeway, with an average width of 0.4 mile between the 7.3m line on either side.

The following berths are situated on the piers and quays at Pictou:

Berth	Length	Depth
Pier A (Used for pleasure craft in summer. In a state of repair.)	80m	0.9-3.6m
Irving Oil Jetty (reported in ruins)	40m	—
Pier B	60m	1.8-4.6m
Pier C (transit shed)	203m	6.4-10.4m
Quay	212m	4-4.8m

Several smaller wharves are situated W of Pier B.

An isolated shoal, with a depth of 5.2m, lies 150m NE of the outer end of Pier "C," and two other shoals with the same depth lie close off the quay wall. A shoal area, with a depth of 4.9m, extends SE from the W end of the quay wall.

Pictou Landing, 1 mile SW of Pictou Bar Light, has an L-shaped pier for small vessels. The pier is 56m long and 32m across the outer face, with depths of 2.4 to 4.6m alongside and 4m available on the inner face.

Abercrombie Point, lies nearly 1 mile SSW of the piers at Pictou. It is the site of the Scott Maritimes Pulp Mill which is marked by a conspicuous tower 74.4m high. An oil berth consisting of three concrete platforms, joined by catwalks, lies 0.3 mile NNW of the point, and is connected by a walkway. The berth is 55m long, with a depth of 8.5m alongside. The two outside berthing platforms are floodlit. The wharf is reported (1997) to be in disrepair.

A ferry pier (0.9m depth at its head) is situated 0.15 mile SE of Abercrombie Point.

A causeway connects Skinner Point, 0.2 mile WSW of Abercrombie Point, to the opposite shore; the causeway closes Middle River and West River to navigation.

Aspect.—The town of Pictou stands on the N shore of the harbor and on the slope of a ridge rising to 61m. A spur of this ridge forms Battery Point. The most conspicuous building is the R.C. church, of red brick with a spire, situated near the summit of a hill E of the town. A large blue water tower is also conspicuous.

The head of Pictou Harbor is blocked by a causeway extending N from Skinner Point to the opposite shore. West River and Middle River, which originally flowed to the harbor, now form a reservoir behind this structure.

Pictou Bar Light is exhibited from a hexagonal tower situated on the extremity of Lighthouse Beach on the S side of the harbor entrance.

A second light, shown from the same structure as Pictou Bar Light, forms the front light for a set of range lights, in line bearing 249.5˚. The rear light is shown from a red skeleton tower situated near Battery Point.

Range lights are also shown from the N shore about 0.7 mile W of Pictou Bar Lighthouse. The front light is shown from a white pyramidal tower and the rear light is shown from a similar structure. These lights, in line bearing about 262˚, lead from the alignment of the outer range lights into the entrance of the harbor.

Town Point Light is shown from a square skeleton tower at the outer end of Pier "C".

Pilotage.—Pilotage is not compulsory, but is available. Due to the narrow channel over the bar and the strong tidal currents, pilotage is recommended for those without local knowledge. To avoid a delay in obtaining a pilot, the master of a ship bound for Pictou must report via any coast station by VHF or radiotelegraph an ETA to "Pilots Pictou" Mat least 12 hours before at the pilot boarding station. The ETA must be confirmed or corrected 4 hours prior to arrival. The time used


EAST RIVER
PICTOU LANDING
SPIT
LIGHT
PICTOU BAR
GOVT. WHARVES
PICTOU
LOUDEN BEACH
COLE POINT
PICTOU ROAD

Pictou

Pictou

must be GMT. The pilot boarding station at 45˚42'30"N, 62˚34'00"W.

The master of a ship that is to depart or make a move must report to "Pilots Pictou" 4 hours prior to such ETD. The time used should be local time. If GMT is used, it must be expressly stated.

Anchorage.—The usual anchorage is to the E of the wharves at Pictou in 9.1 to 12.2m, mud, avoiding the prohibited anchorage area described below.

The recommended anchor berth is with Pictou Bar Light bearing 244˚, distant 2 miles.

Anchorage is prohibited in the area within a radius of 305m from the inner end of the marine railway slip at Battery Point.

Caution.—A submarine cable crosses the harbor from a position near Seaview Point (Grave Point), the opposite shore near **Moodie Point**. A second cable crosses from a point W of Pier "B" to **Christie Point**. Another cable is laid from the outer end of Lighthouse Beach to a position near Moodie Point.

6.49 East River of Pictou.—This river is navigable from Pictou to **New Glascow** (45˚36'N., 62˚39'W.), a distance of 6.5 miles. The narrow channel is marked by range lights and buoys.

The channel has been dredged from the river entrance to Trenton, a distance of about 4.5 miles. This channel is in three long reaches, and avoids many of the curves and bends in the river. The depth in the first two reaches as far as Stonehouse Point is 3.4m, and 3m in the third reach. Silting takes place and local information should be obtained before attempting to navigate this river.

A lift bridge and causeway cross the river at Stonehouse Point. Close above the bridge, power cables with a vertical clearance of 21m cross the channel. A large electrical power plant is situated at Stonehouse Point.

The T-shaped wharf of Irving Oil Company at Trenton, with a face 15m long, was reported to have a depth of 2.1m close off the outer face. There is a small turning basin at Trenton. It has been reported (1997) that this wharf has been removed.

At New Glascow, about 2.3 miles above Trenton, navigation is limited to small craft by a bridge with a vertical clearance of 2.4m. There is a marginal wharf about 183m long just below the bridge with a depth of 1.8m alongside.

Range lights are shown from Norway Point for the first reach of the channel. Both front and rear lights are shown from skeleton towers. These lights are in line bearing 324˚.

Range lights for the second reach are shown from the shore E of the abandoned lock at Stonehouse Point. The front light is shown from a white pyramidal tower. The rear light is shown from a red pyramidal skeleton tower. These lights are in line bearing about 119.5˚.

A shipyard at Battery Point (1.5 miles WSW of Pictou Bar Light) can undertake major hull and machinery repairs. Two slipways are situated on the point. The cradle length is 98.8m, with a maximum beam of 18.2m.

One floating dock is available: 2,000 grt capacity, 91.4m long, 18.2m beam, draft forward 5.4m, aft 7.9m. Mobile cranes up to 25 tons are available.

Caution.—The aids marking the East River channel may be adjusted to suit the water conditions prevailing.

Pictou Island to Cape John

6.50 Pictou Island (45˚49'N., 62˚33'W.), nearly 8 miles NE of the entrance to Pictou Harbour, is composed of clay and sandstone, and is 46m high near its center. The N side of the island is wooded and the coast is mostly formed of low cliffs. A submarine cable runs from Roger Point, low and sandy, to Widow Point on the mainland. A reef extends 0.5 mile from Seal Point, the E extremity of the island. Deep water lies N and S of this reef and vessels should not pass close either side, especially with a flood or W current. A detached breakwater lies about 0.3 mile S of Seal Point. Shallow water extends 0.3 mile, in places, off the N coast. The 5.5m line runs about 0.5 mile off the W end of the island, with nearly drying rocks within it.

Depths—Limitations.—A wharf, protected by two breakwaters, is situated on the S side of Pictou Island, about 1 mile from West Point, the W extremity. The wharf is 38m long with a depth of 1.8m at the end. There is very little water in the basin between the breakwaters.

Aspect.—Pictou Island (East End) Light, situated on the SE point, is a red and white rectangular daymark on a red framework tower, 10m high.

Pictou Island (West End) Light, on West Point, is shown from a red tower with a similar daymark, 6m high.

Pictou Island breakwater light is shown from a red pyramidal skeleton tower situated on the outer end of the W breakwater.

Pictou Island South Light is shown from a white pyramidal tower situated on the S coast of the island close NNW of Pictou Island breakwater light.

Pictou Banks extend from the W end of Pictou Island for the distance across the channel towards the mainland. The depths vary from 5.2 to 7.3m except on Middle Shoals.

Middle Grounds (Middle Shoals), a chain of rocky patches with a least depth of 3.4m, cover a part of Pictou Banks about midway between West Point, Pictou Island, and Caribou Point.

Caribou Channel lies between the SW end of Pictou Banks and the reefs extending from Doctor Island and Gull Island. At the N end, in the narrowest part, the least depth is 8.2m. The tidal currents run up to 2 knots.

Caribou Light (45˚46'N., 62˚41'W.) is shown from a white square tower situated on Gull Point, the NE end of Gull Island.

Dangers.—Doctor Reef extends 1 mile from Doctor Point to a depth of 5.5m. Skinner Reef, drying, lies 0.4 mile NE of Doctor Point. Seal Rock, which also dries, lies 0.6 mile SE of Doctor Point, and shoal water forming to Logan Point. Caribou Reef dries out for 0.3 mile N of Caribou Point. Shoal water extends 0.5 mile N of Gull Island and Caribou Island.

Note.—A wreck, with a depth of 7.9m, lies about 1 mile W of Middle Grounds shoal. The wreck, of which the superstructure has been removed, lies in an E-W direction, and the maximum height of the wreck above the seabed is 3m.

6.51 Caribou Harbor (45˚44'N., 62˚42'W.), between Caribou Island and Doctor Island on the N side, and the mainland on the S side, is shallow except for a narrow tongue of deeper water extending about 3 miles within the S entrance. The dredged channel, used by the Wood Islands Ferry Service,

lies between Gull Island and Doctor Island. This channel is buoyed and is reportedly maintained at a depth of 4.6m, but continuous silting takes place. The ferry service is maintained from May to November inclusive.

The ferry terminal at Caribou consists of two ferry berths. Fishermans Wharf extends 69m from the E side of the ferry terminal; this wharf is 6m wide. There is a least depth of 1.2m alongside. Boats can also secure to the ferry wharf for a distance of 30m N of Fishermans Wharf, in a depth of 2.1m. There is a least depth of 0.9m alongside the wharves in the basin close S of Fishermans Wharf.

Aspect.—Range lights, in line bearing 209.5˚, are shown from the ferry terminal.

The former S entrance to Caribou Harbor, between Widow Point and Oak Tree Point, was reported to be closed to navigation due to silting.

The coast between Caribou West Gully and Cape John, 15 miles W, is nearly straight and unbroken, with shallow water extending 0.4 mile off it. Low cliffs of clay and sandstone, with a maximum elevation in places of 15.2m, predominate. There is good landing for boats in good weather.

At Toney River, 5 miles W of Caribou West Gully, are two piers 10m apart, with 0.9m of water in the river mouth between them. A breakwater-wharf extends from the E point of MacDonalds Cove, 4 miles W of Toney River, with 3m depth at the outer end. Skinner Cove, 3.5 miles E of Cape John, is a small boat harbor protected by two breakwaters. Part of the basin dries at LW.

A sectored light is shown from a square skeleton tower on the NE corner of the W breakwater at Skinner Cove.

Amet Sound to Pugwash Point

6.52 Cape John (45˚49'N., 63˚07'W.), with sharp sandstone points 12.2 to 15.2m high, is the E entrance point of Amet Sound, which affords good anchorage for vessels of moderate size. The entrance to the sound is divided by Amet Shoals and Waugh Shoal into three passages. John Bay, Brule Harbor, Barrachois Harbor, and Tatamagouche Bay all lie at the inner end of the sound.

Amet Island, in the entrance to Amet Sound, presents sandstone cliffs on every side, is flat and grassy on top, about 6.1m high, and is constantly diminishing in size from erosion. Reefs and shoals surround the island, and Amet Shoals extend 4 miles E and 2 miles SE of the island. There are depths of 1.2m, 1 mile from the island, and East Patch, with a depth of 4.3m, is 3 miles NE of the lighthouse.

Amet Island Light (45˚50'N., 63˚11'W.) is shown from a square skeleton tower, 6m high, situated near the center of the W part of the island.

Waugh Shoal, about 2 miles WNW of Amet Island, is a rocky bank with a least depth of 3.4m towards the N and steep-to part of the shoal.

Saddle Island, wooded and low, is joined at LW to the N side of Malagash Point, the W entrance point of Amet Sound. A spit runs out 1 mile from the E end of Saddle Island, with Washball Rock, awash, 0.4 mile from the island. A reef extends E from Malagash Point, with shoal water extending nearly 0.5 mile.

John Bay (45˚47'N., 63˚06'W.) is clear of detached shoals, but the shoal bank extending from the shore is often very steep. The head of the bay is encumbered by sandy shoals, drying out 1 mile at the mouth of River John. The bar across the river mouth has a depth of 0.3m, and a channel with depths of 0.3 to 2.1m leads as far as the bridge at River John Village, 1 mile upstream. The river mouth is buoyed and the channel is marked by stakes.

There is an L-shaped breakwater-wharf on the E side of Reef Point, 0.5 mile S of Cape John, providing a boat shelter. There is a depth of 1.2 to 2.1 at its outer end.

Anchorage.—Good anchorage can be taken in summer in depths of 6.4m, mud, near the head of John Bay, about 0.8 mile N of Long Point. The anchorage is not safe in NW winds.

6.53 Brule Harbor (45˚45'N., 63˚11'W.), on the SE side of Brule Point, is shallow with the greater part consisting of drying mud flats and weeds. Weatherbies Spit and the drying flats extending 0.5 mile SE of Brule Point provide some protection for small craft. The entrance channel is buoyed. The public wharf in the harbor is in ruins.

Brule Shoals, 1 mile N of Brule Point and parallel to the shore for 1 mile, has a least depth of 2.7m, rock.

Barrachois Harbor is entered between Peninsula Point and Chambers Point by a narrow channel with a depth of about 4m. Jollimore Reef, drying 0.6m at the outer end, extends 0.3 mile NW from Peninsula Point. A drying reef extends 0.2 mile E from Chambers Point, and Middleground Shoal, with a least depth of 1.8m, lies in the entrance to the harbor. The harbor contracts to a very narrow channel 1 mile S of Chambers Point, with 0.9 to 2.4m depth, and turns SE near the highway bridge. A small government wharf lies on the W side of the channel below the bridge.

Tatamagouche Bay affords good anchorage, with soft mud bottom everywhere, for shallow-draft vessels, but the head of the bay shoals rapidly, and McNabs Bay (The Basin) is nearly all dry. The best anchorage for vessels of moderate draft is about 1 mile NW of Peninsula Point in depths of 7.3 to 7.9m. This anchorage is not safe in strong NE winds.

The government wharf near South Shore (Malagash Center), with an L-head 82m long, extends from the ruin of a large warehouse. Inside the basin formed by the L-head there was a depth of 0.6m. The dredged approach channel is reported to have silted to less than charted depths.

Malagash Wharf is shown from a red square skeleton tower on the SE end of the wharf.

Waugh River is approached through a very narrow channel between drying mud flats, but there is said to be 1.5m depth as far as the wharf at Tatamagouche, with 0.6m over the gravel bar. The wharf is 21m long and dries at LW. Stakes mark the channel.

Caution.—The passages into Amet Sound are difficult and complicated by erratic tidal currents. Local knowledge is necessary for safe navigation. Middle Passage is considered to be the safest under normal conditions.

Treen Bluff, 1.5 miles W of Saddle Island, is a low cliff, with Treen Reef extending 0.5 mile N from it to a depth of 5.5m. Gravois Point, 2.5 miles W of Treen Bluff, is the highest part of the clay and sandstone cliffs in the vicinity.

6.54 Wallace Harbour (45˚49'N., 63˚29'W.) (World Port Index No. 5790), at the mouth of Wallace River, has depths of 4.3 to 9.1m in a narrow channel between drying mud flats. The alignment of the outer range lights crosses Oak Island Bar, composed of sand with a depth of 2.7m, into Ship Channel. Ship Bar, with a least depth of 4.3m and marked by two buoys, provides a deeper but less direct approach. This channel is entered on a W course, 0.5 mile N of Gravois Point, and course is altered to the NW after passing the buoy, "UH2", moored at the S limit of Oak Island Bar. A buoy, "UH3", is moored close to the E edge of Horton Bank, and course is then altered to the alignment of the outer range lights.

Within the harbor, drying flats of stiff red clay lie either side of the narrow buoyed channel. A drying middle ground, 0.5 mile W of Palmer Point, further diminishes the width of the channel to about 90m. Nearly abreast the E end of the middle ground a narrow channel leads to the S and then through drying flats into Lazy Bay, which has gypsum cliffs 9.1m high at its head. The land on the S shore of the harbor rises gradually to the summit of a 122m high ridge.

There is an L-shaped government wharf at Wallace Village on the S side of the harbor, with a depth of 3.4m at the 43m outer face. Two ruined wharves lie to the E of this wharf. A bridge crosses the river at Betts Point, 0.5 mile W of the government wharf.

Anchorage may be had in depths of 6 to 11m, mud, inside the harbor entrance, close W of Palmer Point, where the channel is 228m wide. Fairly safe anchorage may be found in 5.8 to 8.2m, mud, W of the buoy off Horton Bank.

Tidal currents attain a rate of 1.5 knots in the entrance. The ebb is somewhat stronger in the spring from the snow run-off.

Range lights are shown on Mullins Point, on the N side of the harbor entrance. The front light is shown from a square skeleton tower. The rear light is shown from a similar structure. These lights, in line bearing 280.5˚, lead across Oak Island Bar and into Ship Channel to the point of intersection with the inner sector light.

Wallace Harbour sector light is situated on Macfarlane Point. The light is shown from a white pyramidal tower with a red vertical stripe. The white sector, (visible between the bearings of 257˚ and 258˚), indicates the preferred channel.

A light is shown from a red square skeleton tower on the outer end of the government wharf at Wallace.

Caution.—It is strongly recommended that the services of a local pilot should be obtained for vessels of even moderate size unless previous experience and local knowledge have been acquired.

Fox Harbour, between Mullins Point and Mackenzie Point, consists of a channel through drying flats of red clay and weeds. There are depths of 4.3 to 7.6m in this channel, but only 1.2m over the bar from Ship Channel.

The coast between Mackenzie Point and Pugwash Point is unbroken and composed generally of clay and sandstone cliffs about 15.2m high, rising inland to a ridge 45.7m high.

Numerous shoals, some of them detached, lie with depths of less than 5.5m up to 1.5 miles off this coast, and depths of 6.7 to 7.6m lie up to 3.5 miles N of McLean Point.

Pugwash Harbour (45˚51'N., 63˚40'W.)

World Port Index No. 5780

6.55 Pugwash, situated at the mouth of the Pugwash River, is a small port that ships a considerable amount of wood pulp and rock salt.

Pugwash Road, at the confluence of the Pugwash River and River Philip, lies between Pugwash Point and Lewis River, about 2.5 miles WSW. Reefs extending from both reduce the usable area of the road and caution is necessary in the approach.

The entrance to the harbor is difficult, requiring extensive local knowledge because of shifting sand banks and sharp turns.

Ice.—The navigation season is from April to December.

Tides—Currents.—Mean spring tides rise 2.6m and mean neaps rise 2.3m.

Tidal currents generally follow the channel and attain rates up to 2 knots at the river entrance, but may be stronger on the outgoing current during the spring thaw. Close by Oxley Point is a small basin formed by the bend in the river where the tidal current can run at up to 4.5 knots.

Depths—Limitations.—The least charted depth in the channel is maintained at about 4.5m. Silting causes frequent dredging. Reports indicate pilots can carry a depth of 4.6m to the berths by varying from the entrance ranges.

The greatest danger on approaching is Ballast Ground, with a least depth of 3.3m, about 2 miles NNW of Pugwash Point. A depth of 3.3m is located on the third range and requires local knowledge to avoid. There is a rock, with a depth of 2.7m, close W of the junction of the second and third ranges and a rock, with a depth of 1.5m, 45m S of the S face of the wharf.

Vessels up to 5,000 grt are taken in frequently. Drafts to 5.5m can be taken in on most HW. The greatest draft accommodated was 6.5m.

The public (railway) wharf at Oxley Point is 146m long on the W face with depths of 6.7m alongside. The S face is 149m long with a depth of 6.4m alongside, but depths of 2.7m were reported to lie 40m and 76m off the E corner of the S face of the wharf.

Fishermans Wharf, situated S of the public wharf on the opposite shore, is 61m long and 12m wide, with a reported depth of 5.5m at the outer end.

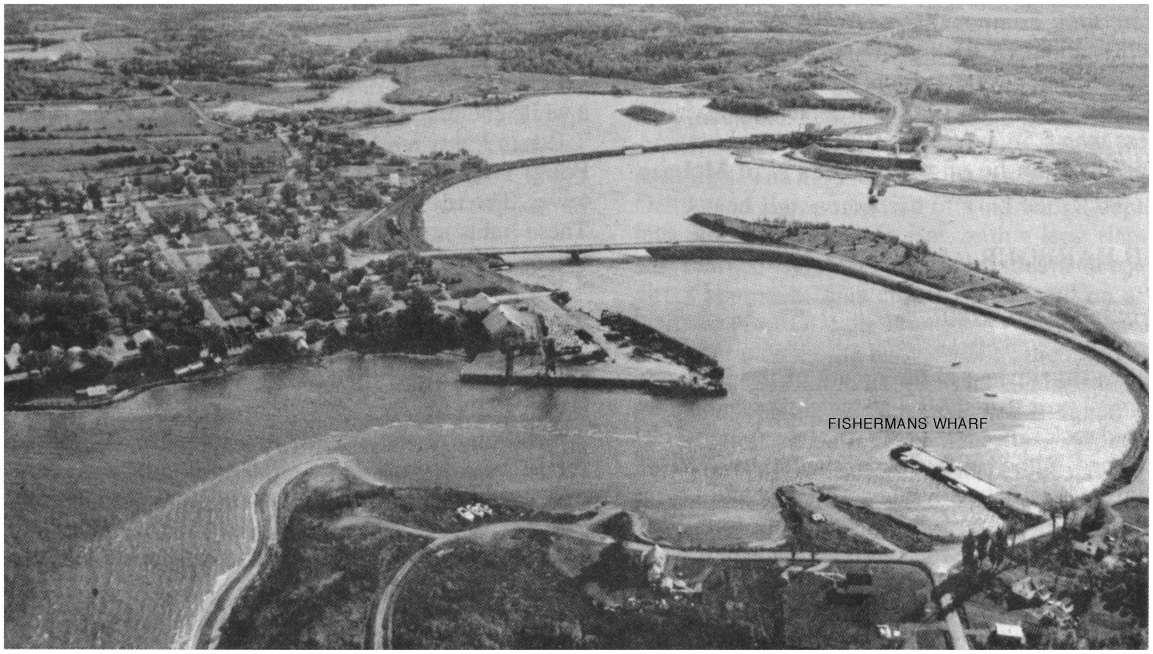
A bridge, with a vertical clearance of 3.6m, crosses the Pugwash River E of the public wharf. Small craft can proceed upstream for several miles above the bridge.

Aspect.—The channel from Pugwash Road into the harbor is buoyed.

Pugwash Light is shown from a red skeleton tower with a white enclosed upper portion on Fishing Point.

Range lights are shown on Bergeman Point (Bergmans Point). The front light is shown from a square skeleton tower. The rear lights are shown from a similar structure. These lights are in line bearing 205˚ and lead in from the strait.

Fox Point (Biglow Point) range lights are shown from the shore E of the point. Both lights are shown from red square skeleton towers. These lights, in line bearing 160.5˚, are only visible when in alignment and lead into Pugwash Roads.



Pugwash

Range lights are also shown near Steven Point. The front light is shown from a red skeleton tower. The rear light is shown from a similar structure. These lights, in line bearing 086.5˚, lead from the intersection with Biglow Point range lights across Pugwash Bar and are only visible when in alignment.

A fourth pair of range lights is shown close E of Fishing Point. The front light is shown from a skeleton tower. The rear light is shown from a similar structure. These lights, in line bearing 350.5˚, astern, lead from the intersection with the Steven Point range into the entrance to Pugwash River and are visible only when in alignment.

A radio tower, 101m high, is situated 2.5 miles SSW of Pugwash Light.

Pilotage.—Pilotage is compulsory. To avoid a delay in obtaining a pilot, the master of a vessel bound for Pugwash must report via any coast station by radiotelephone or radiotelegraph the vessel's ETA to "Pilots Pugwash" at least 12 hours before arrival at the pilot boarding station. The ETA must be confirmed or corrected 4 hours prior to a new ETA. The time used must be GMT. The pilot boarding station is situated at 45˚54'30"N, 63˚40'42"W, about 0.7 mile NE of UK2 lighted buoy.

The master of a ship that is to depart or make a move within the compulsory pilotage area must report to "Pilots Pugwash" 4 hours prior to such ETD. The time used should be local time. If GMT is used, it must be expressly stated.

Anchorage.—Pugwash Road affords excellent anchorage in depths of 4 to 6m, sand and clay. The anchorage is bounded on the E side by the shoal ground, with depths less than 3.7m, extending 0.3 mile W and 0.4 mile SW from **Fishing Point** (45˚52'N., 63˚41'W.) and on the W side by Philip Bar (sand and stones), with depths of less than 1.8m, extending about 1.5 miles ESE from Lewis Head, 2 miles W of Fishing point. The anchorage is sheltered from NE winds by Pugwash Reef, which extends 0.4 mile WNW from Pugwash Point, and from NW winds by Lewis Reef, 1.25 miles N of Lewis Head.

The best anchorage in Pugwash Road is in a depth of 5.8m, with Fishing Point Light bearing 085˚ at about 0.5 mile. There is also anchorage about 0.5 mile farther SSE in depths of 4m.

Caution.—Mariners are cautioned that due to shifting sand, the depths in the approaches and in Pugwash Road may vary considerably from those shown on the chart. Local knowledge is essential in this area.

Lewis Head to Indian Head

6.56 Lewis Head (45˚54'N., 63˚44'W.), formed of a bank of clay about 9.1m high, is bordered by drying sandbanks for a distance of 0.5 mile offshore. A conspicuous white house is situated just within the extremity of the head.

River Philip, entered 0.75 mile SE of Lewis Head, is obstructed by a drying bar of sand and stones, leaving a narrow tortuous channel on the S side N of Rocky Ledge, with a depth of 1.2m or less in places. Within the bar, a depth of 3.7m can be carried for 5 miles upstream in a channel only 30m wide, in parts, through flats of mud and weeds. Boats can ascend for about 9 miles. The river discharges little water, except in a freshet.

A bridge, with a vertical clearance of 2.7m, crosses the river at Port Philip, where there is a public wharf 30m long, with a depth of 2.1m alongside the outer part of the face on the channel side. Underwater obstructions from an old bridge are situated close downstream from the bridge. These obstructions are not marked.

The channel from Philip Bar to Port Philip is marked by buoys at some of the essential points.

From Lewis Head the coast trends NW for 7 miles to the Shinimicas River, the narrow channel of which is buoyed.

There is a government wharf at Northport, near the river mouth. The wharf, the inner end of which adjoins the highway bridge, is 40m long, with an L-end 43m long. There is a depth of 1.2m alongside.

Coldspring Head, about 8 miles NW of Lewis Head is low and fringed by reef. A light is shown from a white square tower situated on the head.

Baie Verte, between Coldspring Head and Indian Point, 9 miles NNE, is completely open to E winds. The head of the bay is shallow, and flats of mud and weeds dry out to 0.75 mile from shore. There are no deep water ports along its shores, but several boat harbors are situated in the area hereabouts.

Aggermore Rock, with a depth of 5.2m, lies 4 miles NNE of Coldspring Head. Laurent Shoal, with depths of 4.9m, runs NW from Aggermore Rock. Shoal water extends from both sides of the bay.

Spear Shoal, of sand and sandstone, lies 2 miles S of Indian Point, with Heart Shoal extending W of Spear Shoal. Both these shoals have least depths of 2.4m.

Boss Spit, drying, extends 0.75 mile from the S shore between Boss Point and Jackson Point, on the S side of the bay.

Tidnish River enters the bay on the S side, 7.5 miles W of Coldspring Head. There is a narrow boat channel, with depths of 0.6 to 2.1m, through flats of mud and weeds, which dry out 1 mile from the river mouth. The channel is marked by stakes as far as the bridge, 2 miles above the entrance. Buoys mark a detached shoal 0.75 mile N of Tidnish Head.

Gaspereau River flows into the head of the bay on the N side. There are only 0.6m of water in the boat channel to the railway bridge at Port Elgin. There is a government wharf, 71m long, parallel to the channel, with a depth of 0.6m alongside, situated about 1.3 miles from the entrance to the channel, on the N bank.

Fort Monckton Point (46˚03'N., 64˚04'W.), the S entrance point to the Gaspereau River, is marked by a light exhibited from a circular tower.

Cape Tormentine to Cape Bald

6.57 Cape Tormentine (46˚07'N., 63˚46'W.), 1 mile N of Indian Point, is formed off low cliffs about 9.1m high. This headland is located at the E end of New Brunswick, and along with the coast W, is responsible for the reduction in the width of Northumberland Strait at Abegweit Passage. The cape and the village of Cape Tormentine will probably be the first S land seen by W vessels transiting the strait in moderate visibility.

Tormentine Reef lies about 2.8 miles E of Indian Point, and part of it just dries. Rock Reef, an extensive rocky area with a least depth of 2.1m, lies between Tormentine Reef and Indian Point.

A lighted buoy is moored 0.75 mile ENE of the drying parts of Tormentine Reef. Vessels should not attempt to pass W of this buoy when rounding Cape Tormentine.

Depths—Limitations.—The abandoned Canadian National Railway ferry pier extends about 0.4 mile NE from the shore, then divides into two arms which trend to the SE from the approach pier and form a docking basin about 0.1 mile wide. The inner arm is 0.2 mile long, and the outer about 0.3 mile in length. The basin between the arms of the ferry dock has depths of about 6m for the major part, but shallows at its head and SW side to 1.7m. The ferries berth on the SW side of each of the two arms. A public wharf extends at right angles from the inner arm of the basin. This wharf has a depth of 1.2m alongside. The entrance to the basin has a depth of 0.8m and depths of 1m lie close E from the E wall. The E wall of the basin is 91m long.

Railway tracks serve the outer arm and loading ramp. Two detached breakwaters, each about 0.1 mile long, lie in the NNE-SSW direction about 0.1 mile off the arms.

Local knowledge is recommended for approaching the above berths.

Aspect.—A light is shown from a square skeleton tower on the NE end of the outer breakwater.

Submarine cables are laid across Northumberland Strait between the Cape Tormentine ferry terminal and Traverse Cove, as indicated on the chart. Vessels are cautioned against anchoring in the vicinity of these cables.

Anchorage.—Anchorage is prohibited in the turning basin of the ferry terminal.

The Confederation Bridge crosses Northumberland Strait joining Jourimain, New Brunswick and Borden Point, Prince Edward Island, a distance of about 7 miles. Over the navigable waters of Northumberland Strait, the bridge is composed of 44 concrete navigation spans, numbered from Pier 1, on the Prince Edward Island side, to Pier 44, on the New Brunswick side. The typical span has a horizontal distance of 250m and a minimum vertical clearance of 23m, with a vertical clearance of 35m at mid-span.

The navigation span for vessels greater than 1,425 gross tons lies between Pier 21 and Pier 22, about 3.1 miles SSW of Borden Point. The horizontal clearance is established at 172m, with a vertical clearance of 48m at the center of the span.

The following restrictions apply at the navigation span:

Restriction category	Passenger ships	Cargo ships
Maximum gross tonnage	33,500	47,000
Maximum speed over the ground within 5 miles of the bridge	11 knots	8 knots
Maximum draft	15m	15m
Maximum air draft	48m	48m
Maximum beam	35m	35m

No vessel greater than 1,425 gross tons shall transit the bridge if visibility is less than 1.5 miles.

Vessels of 1,425 gross tons or less, other than tug and tow combinations, may transit the bridge between Piers 3 and 5 on the Prince Edward Island side and Piers 42 and 44 on the New Brunswick side. The following restrictions apply:

Confederation Bridge from N

Restriction category	Between Piers 3 and 5	Between Piers 42 and 44
Maximum speed over the ground	15 knots	15 knots
Maximum draft	10m	5.5m
Maximum air draft	28m	28m

The waters within 5 miles on either side of the bridge are designated as an area of alternating one-way traffic for vessels greater than 1,425 gross tons transiting the bridge.

Pilotage is compulsory for all vessels 1,500 grt and over within the Confederation Bridge Compulsory Pilotage Area, which is bounded, as follows:

a. 46˚11.0'N, 63˚47.0'W.
b. 46˚15.2'N, 63˚49.2'W.
c. 46˚14.0'N, 63˚43.5'W.
d. 46˚10.5'N, 63˚41.5'W.

Vessels approaching from the E board the pilot about 3.4 miles SE of the navigation span. Vessels approaching from the W board the pilot about 3.9 miles NW of the navigation span.

A Vessel Traffic Service Zone (VTSZ) has been established between lines, as follows:

1. West Side—Cape Egmont, Prince Edward Island (46˚24.1'N., 64˚08.1'E.) to Fagan Point, New Brunswick (46˚13.7'N., 6413.7'E.).

2. East Side—Rice Point, Prince Edward Island (46˚07.8'N., 63˚13.3'W.) to Cape Cliff, Nova Scotia (45˚51.6'N., 63˚25.0'W.).

Participation is mandatory, as follows:

1. All vessels of 20m or more in length.
2. Vessels engaged in towing or pushing where the combined length of the ship and any vessel or object towed or pushed by the ship is 45m or more in length.
3. Vessels engaged in towing or pushing where the length of the vessel or object being towed or pushed by the ship is 20m or more in length.
4. Air cushion vehicles of 8m or more in length.

Vessels shall report to Northumberland Traffic on VHF channel 12 at the charted call-in points.

Vessels may not overtake or meet another ship, come about, or anchor within 0.5 mile of the routing system.

6.58 Jourimain Island (46˚09'N., 63˚49'W.), joined to the mainland by sand bars and marshes, lies about 3 miles NNW of Cape Tormentine and appears as two islands when seen from a distance. Marshes and drying flats bisect the island.

Sand Reef (Jourimain Shoals), with a least depth of 4m, lies with its SE extremity 1 mile NE of the outer pier of the Cape Tormentine ferry terminal. The reef extends NW from this point for 2 miles to Jourimain Rocks, with a depth of less than 1.8m. The area between Jourimain Rocks and Cape Jourimain, the E point of Jourimain Island, is very shallow and foul.

Tidal currents in the vicinity of Tormentine Reefs and between them and Sand Reef are strong. The flood sets S and the ebb N, with the S current attaining a rate of about 3 knots.

A lighted buoy is moored at the S end of Sand Reef (Jourimain Shoals) and close N of the 249˚ approach ferry terminal range.

Anchorage.—There is good anchorage during W winds in depths of 9.1 to 11m, clear of the submarine cables, SE of Sand Reef, between it and Tormentine Reefs.

6.59 The coast trends to the W from Gunning Point, the N tip of Jourimain Island. Jourimain Shoal, with a patch drying 0.3m, extends NE for almost 1 mile from Gunning Point.

Jourimain Shoal lighted buoy is moored nearly 2 miles N of the drying part of Jourimain Shoal.

Drying flats fill the bight which extends for 4 miles W of Gunning Point. There is a breakwater 4.5 miles W of Gunning Point, at Botsford, but there is only a 0.3m depth at the S face of the irregularly-shaped 232m long wharf.

A light is shown from a square skeleton tower on the SE corner of the breakwater at Botsford.

Anchorage is prohibited in the area that crosses the Northumberland Strait between Botsford and Cape Bruin.

Little Shemogue Harbour is completely filled with drying flats, except for a narrow intricate boat channel leading to an L-shaped wharf 90.5m long and 77.5m wide at the face, with a depth of 2.1m alongside. The channel to the wharf is buoyed.

Little Shemogue Wharf light is shown from a square skeleton tower situated on the outer end of the wharf (46˚10'N., 64˚04'W.).

A lighted buoy, marked "R-Little Shemogue XE," is moored about 1.5 miles NNE of the above-mentioned light.

Shemogue Harbour, mostly filled with drying mud flats, has a narrow buoyed channel leading to a boat anchorage. The channel has very little depth in places. Range lights, in line bearing 219.5˚ and visible only when in alignment, are shown at Shemogue Harbour. These lights lead over the bar and into the channel. The lights are shown 24 hours a day and from April 1 to December 1.

At the village of Petit Cap, 2 miles NW of the entrance to Shemogue Harbour, there is an irregular-shaped breakwater-wharf, 253m long. At the outer end, two arms extending SW enclose a U-shaped basin with a depth of about 1.5m. The outer arm is 57m long. Both arms exhibit lights.

A light is exhibited from a square skeleton tower on the SE corner of the breakwater at Petit Cap.

Cap Pele (Cape Bald) (46˚14'N., 64˚16'W.), 5 miles NW of Shemogue Harbour, is 12m high. Cap Pele church tower, 1.5 miles SW of the cape, is conspicuous from seaward. A breakwater wharf with a U-shaped outer end extends to the E from Cap Pele. The main part is 175m long. The outer L-extension is 64.6m long and the U-shaped outer end is 46m long.

Bas Cap Pele approach light is situated on the S shore of the breakwater wharf.

Bas Cap Pele Wharf light is shown from the outer end of the breakwater wharf.

An isolated shoal, with a depth of 5.2m, lies approximately 5.5 miles NNW of Cap Pele. Depths of 6.7 to 11m lie between this shoal and the cape.

L'Aboiteau lies 1.5 miles W of Cap Pele. Training piers protect the entrance of the pond and lead into a small boat harbor with a depth of about 1.5m. The W breakwater, 85m long, has a depth of 1.2 to 1.8m alongside. The E breakwater, 42m long, has a depth of 1.8m alongside. At its S end, it is joined to a beach protection wall which is connected to a government wharf, 68m long, with a depth of 1.2m. The channel between the breakwaters is 11m wide and is spanned by a footbridge. There is a depth of 1.2m in the harbor. A light is shown from the outer end of the E breakwater.

Point aux Bouleaux, about 6.5 miles W of Cap Pele, is low and sandy. There is a government wharf at Robichaud, about 1 mile E of the point, which is 183m along with an L-head, 105m in length. There is a depth of 1.3m alongside the inner face of the L-end. A light is shown from the outer end of the wharf.

Shediac Bay to Chockpish River

6.60 Shediac Bay (46˚17'N., 64˚32'W.) is entered between Pointe aux Bouleaux and Cap de Caissie, about 6.5 miles NW. Most of the bay is shallow with depths of less than 5.5m, and it is only suitable for shallow draft vessels. Shediac Island, low and wooded, occupies much of the bay. The passage on the W side of the island has very little depth, with only 0.3m of water in the narrowest part.

Caution.—Grande Digue Bank, with depths of 4.6 to 4.9m, extends 2 miles NE from Cap de Caissie, on the N side of the bay. Medea Rock, with a depth of 2.1m, lies about 2 miles NE of Pointe du Chene, on the S side of the bay. Shoal patches extend S from Medea Rock to the shore. Zephyr Rock, 1 mile W of Medea Rock, has a depth of 2.4m. Chene Bank extends 1 mile N from Pointe du Chene and dries for nearly half that distance. It was reported that the NW corner of Chene Bank is extending farther N. This bank, and the extensive drying bank on the E side and S point of Shediac Island, restrict the approach channel to the harbor.

6.61 Shediac Harbor (46˚13'N., 64˚32'W.) (World Port Index No. 5680) has a channel with a least depth of 4m in the fairway, and in that part between Pointe du Chene, on the mainland, and Snake Point, the S end of Shediac Island. The head of the harbor, S of Pointe du Chene, has depths of 1.5 to 3m in the center, with good anchorage and shelter for small craft.

Ice.—The harbor is generally closed by ice from the first week in December to early April.

Tides—Currents.—Mean springs rise 1.6m, while mean neaps rise 1.2m.

Depths—Limitations.—The government wharf at the village of Pointe du Chene has an outer face 150m long, parallel to the channel, with a least depth of 4.5 to 5.1m alongside the W face. The depths alongside the S face are about 3.8m. Contained on the E side of this wharf, and protected by the approach pier on the S, and breakwaters on the N side, is a shallow boat basin, with depths of 0.8 to 2.5m. This basin is entered through the gap between the N breakwaters. There were charted depths of 0.3 to 2.2m in the entrance channel.

There is a government wharf at Shediac, 1 mile SW of the Pointe du Chene Wharf. There is a dredged depth of 1.5m in the approach channel to the wharf and a depth of 0.9m on its W side.

Aspect.—Range lights are shown on Pointe du Chene close E of the harbor. The front light is shown from a white square tower. The rear light is shown from a similar structure, close S. These lights, in line bearing close to 190˚, lead through the N channel.

Range beacons are situated near the south end of Shediac Island. The two red beacons in line lead from the S end of the north channel to the inner channel.

Range lights are shown on the Government wharf at Pointe du Chene. Both lights are exhibited from similar structures consisting of red pyramidal skeleton towers, and are in line bearing 194˚.

The channel leading to Shediac Harbor is buoyed.

Pilotage.—Pilotage is compulsory. To avoid a delay in obtaining a pilot, the master of a vessel bound for Shediac must report via any coast station by radiotelephone or radiotelegraph the vessels ETA to "Pilots Shediac" at least 12 hours before arriving at the pilot boarding station. The ETA must be confirmed or corrected 4 hours prior to a new ETA. The time used must be GMT. The pilot boarding station is situated at 46˚17'N, 64˚25'W.

The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Shediac" 4 hours prior to such ETD. The time used should be local time; if GMT is used it must be expressly stated.

Anchorage.—The recommended anchorage position at Pointe Du Chene is in the entrance position, NW of the government wharf.

At the head of the harbor of Shediac, there is good anchorage for small craft in depths of 1.5 to 3m.

Caution.—Lights, beacons, and buoys may be moved to suit changing conditions. Local knowledge is essential.

The channel is only 0.1 mile wide off the NW edge of Chene Bank, where course is altered to the alignment of the Pointe du Chene Wharf range lights. The deeper part of the harbor is unsafe in NE gales experienced in autumn, and swells may enter the harbor at HW in a NE summer storm also.

Vessels should exercise caution so as not to approach the port from the SE, because of the possibility of heading into the shoal areas of Medea Rock and the dangers S.

6.62 Cap de Caissie (Caissie Point) (46˚19'N., 64˚31'W.), the N point of Shediac Bay, is bordered by shoal water to a distance of 2 miles. A boat harbor with a depth of 1.2m over the greater part is formed by two breakwaters at the point. Depths alongside the inside faces of the N and S wharves are 0.3 to 1.5m. A light is exhibited from the head of the N breakwater.

A light is shown from a white pyramidal tower on the point.

Cocagne Harbor (46˚23'N., 64˚33'W.) is very shallow and suitable only for small craft. Local knowledge is essential. Cocagne Island is 18.3m high and wooded. The harbor, about 5 miles long N and S, is sheltered by Cocagne Island and a series of sandbars, partly dry at LW, which stretch from the N end of the island to the mainland. Shoals lie off the E side of Cocagne Island for a distance of nearly 2 miles.

Depths—Limitations.—At the village of Cap de Cocagne (Cocagne Cape), situated on the E side of the harbor, there is an L-shaped wharf with a face 117m long. There is a small basin on the S side of the wharf with depths of 0.6 to 1.6m.

Aspect.—Range lights, in line bearing 219.5˚, are shown E of the bridge.

At Cote d'Or, 0.5 mile N of Cocagne River, there is a government wharf 122m long and 12m wide at the outer end, with a depth of 1.2m at the outer face.

At Cormierville, 1 mile NW of Cocagne Island, there is a causeway 151m long, from which a T-shaped wharf extends a further 53m. The length of the outer face is 72m, with depths of from 0.9 to 1.4m. A channel with a depth of 0.9m, marked by stakes, leads to the wharf. A finger pier lies close inside of the outer face.

6.63 Buctouche Outer Bar extends for 7 miles N from abreast Cocagne Island, running nearly parallel to the coast. There are depths of 3 to 4.6m on this bar, with North Patch at the N extremity having 3.7m.

Buctouche Bar, a partially grass covered, narrow isthmus of sand and clay extends for 6 miles in a SE direction from the mainland N of the mouth of Buctouche River and forms a shallow bay inside the bar at the mouth of the river. Much of this bay is filled with extensive flats of mud and eelgrass which nearly dry at LW. The bar is subject to continual change due to action of wind and sea.

Buctouche Bar Light (46˚28'N., 64˚37'W.) is shown from a white square tower situated on the S extremity of the bar.

Off-lying Dangers.—A sandy shoal, with a depth of 7.3m, lies about 8.5 miles ESE of Buctouche Bar Light.

A shoal, with a least depth of 5.5m, sand and shells, lies about 5 miles E of Buctouche Bar Light.

A shoal, with a depth of 4.6m, sand, lies about 4.5 miles NNE of Buctouche Bar Light.

Caution.—Deep-draft vessels transiting Northumberland Strait should take care not to approach the W side of the strait in the vicinity of Buctouche Bar Light.

6.64 Buctouche Harbor (46˚28'N., 64˚43'W.) (World Port Index No. 5670) is entered S of the end of Buctouche Bar, where there is a narrow dredged channel leading through the shoals to Buctouche, on the river about 5 miles from the entrance to this channel. Mariners should not attempt to navigate the channel without local knowledge.

Buctouche Road, off the entrance of Buctouche River, and within Buctouche Outer Bar, is only 0.6 mile across at the widest and deepest part, where a depth of 6.1m or slightly more can be found. In spite of some shelter from seaward provided by Buctouche Outer Bar, it is a very exposed anchorage.

At Crossman Point, on the SE side of the entrance to Buctouche Harbor, there is an L-shaped government wharf 126m long and 109m long at the outer face, with a least depth of 0.3m on the inner side.

Aspect.—Range lights for the second reach of the channel are shown W of Indian Point. The front light is shown from a white square tower. The rear light is exhibited from a red skeleton tower. These lights, in line bearing 317.5˚, lead from the vicinity of Mussel Bank to where the channel turns abruptly to the W.

The Dixon Point reach and Indian Point reach are marked by spar buoys, and a can buoy indicates a wreck on the W side of the channel near Oyster Shoal. The channel beyond the turn to the W into the river is marked by bush stakes.

Depths—Limitations.—There is a government wharf 67m long, with a reported depth of 6.7m alongside in 1977. The ruins of a wharf lie at the lower end. Irving Oil wharf is 0.3

mile below the government wharf. The face is 13m long, with 4.3m depth. Behind this wharf are oil storage tanks.

A bridge above the government wharf, with a vertical clearance of 2.4m, blocks navigation to all but boats on the upper river.

Pilotage.—Pilotage is not compulsory, but is available. To avoid a delay in obtaining a pilot, the master of a vessel bound for Buctouche must report via any coast station by radiotelephone or radiotelegraph the vessels ETA to "Pilots Buctouche" at least 12 hours before arrival at the pilot boarding station. The ETA must be confirmed 4 hours prior to arrival. The time used must be GMT. The position of the pilot boarding station is 46˚31.5'N, 64˚32.0'W. The master of a vessel that is to depart or make a move within the compulsory pilotage area must report to "Pilots Buctouche" 4 hours prior to such ETD. The time used should be local time; if GMT is used, it must be expressly stated.

Caution.—Range lights, buoys, and stakes may be moved to suit the best channel. Silting is constant and depths may not correspond to the charts.

6.65 The coast N of Buctouche Harbor remains low and sandy. At St. Edouard de Kent, about 6 miles NW of Buctouche Bar Light, an L-shaped breakwater encloses a boat basin, with a depth of 1.2m.

A light is shown from a square skeleton tower at St. Edouard de Kent.

Chockpish River, 2.5 miles N of St. Edouard de Kent, affords shelter to boats in the shallow river mouth. Breakwaters on each side protect a narrow winding channel leading into the river as far as the highway bridge. On the S shore below the bridge, a small wharf 30m long parallels the stream. The depth in the channel is about 1.1m and 0.9m alongside the wharf.

A light is shown from a square skeleton tower on the N shore of Chockpish River.

Chockpish range lights are in line bearing 170˚. The front light is shown from a square skeleton tower situated on the shore W of the above-mentioned light. The rear light is shown from a similar structure.

Richibucto Cape to Point Escuminac

6.66 Richibucto Cape (46˚40'N., 64˚43'W.) is a sandstone and clay headland with cliffs about 9.1m high. A reef extends 1 mile offshore from the head, and continues N along the coast for about 3 miles. Richibucto Cape Light is shown from a white square tower situated close N of the head.

About 0.3 mile N of the light is a boat harbor formed by breakwaters enclosing a basin. A stone groin extends 40m from the NE corner of the breakwater. The entrance, 23m wide, with a depth of 1.5m, is at the SE corner of the enclosing breakwaters. The harbor is divided into an inner and outer section by a center pier, 61m long, with a depth of 1.2m on either side. Depths in the harbor run from 1.1 to 1.8m. A derrick is situated near the outer end of center pier. Local knowledge is advisable as silting occurs in the harbor and approach channel.

Richibucto Cape breakwater light is shown from the SE outer end of the breakwater at the boat basin.

6.67 Richibucto Harbor (46˚41'N., 64˚52'W.) (World Port Index No. 5650) entrance lies between two sand spits, each several miles in length and with sand dunes 9.1m high. The buoyed channel over Richibucto Bar is narrow and shifts with the action of gales and ice. There was a least reported depth of 2.7m on the bar and local knowledge is essential, with local pilots being available.

Within the entrance, Richibucto Harbor widens into an expanse of nearly drying mud and weeds, through which the channel of the river runs. On the N side, a shallow bay leads to lagoons lying within North Richibucto Beach, and on the S side, within South Richibucto Beach, is a similar bay with Indian Island dividing it in two.

Richibucto is situated on the W bank of the river, 3.5 miles from the entrance. The buoyed channel leading to the wharves from the entrance is narrow and intricate.

Tides—Currents.—The average tidal rise is about 1m. The currents in the harbor generally follow the channels and attain a rate of 1.5 to 2 knots.

Depths—Limitations.—There is a government wharf at Richibucto, 230m in length along the outer face parallel to the channel. The least depth alongside this face was reported to be 4.3 to 6.1m.

A fisherman's wharf is situated close S of the government wharf. It extends 122m from the shore, with an outer face 38m long. There are depths of 1.4m alongside the N face, 3.8m alongside the outer face, and 1.5m alongside the S face.

Aspect.—The entrance channel and river are buoyed.

The channel range, in line bearing 277˚, is situated on marshland on the W side of the harbor.

Three pairs of range lights indicate the channel, after entering the harbor, to the town of Richibucto. North Richibucto Beach inner range lights, in line bearing 045.5˚, use a structure for the front light, in common with the outer North Richibucto Beach range. A second pair of lights, in line bearing 065˚, is situated on the W end of the intersection with the line of the third pair of lights, in line bearing 227˚, situated at Richibucto.

Anchorage.—The only anchorage in the vicinity of Richibucto is outside the bar near the entrance range, where there are depths of 6.7 to 9.1m about 0.8 mile offshore. The anchorage is completely exposed and the bottom is rock E of the range line.

Caution.—Because of changes, the range lights and buoys are moved from time to time to mark the best channel leading into Richibucto Harbor. Local knowledge is necessary in order to enter.

6.68 From the mouth of Richibucto River, the coast trends N and is low, with sandbars and beaches enclosing extensive shallow lagoons. Kouchibouguac Bay is generally shallow and foul for a considerable distance offshore, and NE gales send a heavy sea into the area.

Kouchibouguacis River discharges into Kouchibouguacis Lagoon (Baie de Saint Louis). Blacklands Gully (Goulet de Terre Noire), about 4.5 miles NW of Richibucto River, is the main entrance into this lagoon from seaward, but local knowledge is necessary to navigate the shallow channel, which is marked by buoys and is only available for boats. The depth

over the bar and into the lagoon and river is variable, with depths of less than 0.9m. The channel is marked by buoys.

Kouchibouguac River, after flowing for more than 1 mile through an extensive, nearly drying lagoon, enters the sea through sandbars at Little Gulley, which have a depth of about 0.5m, frequently shifting in heavy E gales. The channel is at all times narrow and intricate, and should not be attempted without local knowledge.

Kouchibouguac (Little Gully) Sector Light is shown from an aluminum skeleton tower on the N bar at **Little Gully** (46˚51'N., 64˚55'W.).

There is a wharf, with a reported depth of 1.2m alongside, on the N bank of the channel at the entrance of the river into the lagoon.

6.69 Point Sapin (46˚59'N., 64˚49'W.), low and sandy, is located at the N end of Kouchibouguac Bay and is bordered by shoal water.

Sapin Ledge, with a least depth of 3.7m, extends 2.5 miles E from Point Sapin. Sapin Ledge lighted buoy, is moored nearly 3 miles E of Point Sapin, off the E end of the ledge.

At the settlement of Point Sapin, 1 mile SW of Point Sapin, there is a harbor for fishing boats. The entrance into the basin between two breakwaters is 21m wide. An area inside the breakwaters and in the entrance channel was dredged to a depth of 1.5m, but silting is continuous.

In 1992, depths were significantly less than the dredged depth, averaging about 0.8 to 1m for the majority of the basin.

Range lights (003.5˚) lead into the basin between the breakwaters. The front light is shown from a square skeleton tower situated near the inner end of the E breakwater; the rear light is shown from a white square tower on the shore.

The church at the village is conspicuous.

The coast between Point Sapin and Point Escuminac, 6.75 miles N, is low, and shallow water extends some distance from it.

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